

HAVE GUN, WILL TRAVEL: A TANK COMPANY
IN THE LIGHT INFANTRY BRIGADE

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE
General Studies

by

RICHARD R. ROULEAU, MAJ, USA
A.A., Central Texas College, Killeen, Texas 76540
B.S., Niagara University, Niagara University, NY 14149

Fort Leavenworth, Kansas
2003

Approval for public release; distribution unlimited.

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) 06-07-2003		2. REPORT TYPE thesis		3. DATES COVERED (FROM - TO) 05-08-2002 to 06-06-2003	
4. TITLE AND SUBTITLE HAVE GUN, WILL TRAVEL A TANK COMPANY IN THE LIGHT INFANTRY BRIGADE Unclassified			5a. CONTRACT NUMBER		
			5b. GRANT NUMBER		
			5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S) Rouleau, Richard, R			5d. PROJECT NUMBER		
			5e. TASK NUMBER		
			5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Command and General Staff College 1 Reynolds Ave Fort Leavenworth, KS66027-1352			8. PERFORMING ORGANIZATION REPORT NUMBER ATZL-SWD-GD		
9. SPONSORING/MONITORING AGENCY NAME AND ADDRESS ,			10. SPONSOR/MONITOR'S ACRONYM(S)		
			11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION/AVAILABILITY STATEMENT A1,Administrative or Operational Use 06-06-2003 US Army Command and General Staff College 1 Reynolds Ave Fort Leavenworth, KS66027-2314					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT In 1997 the last separate divisional tank battalion was deactivated, leaving no habitually assigned tank battalion or company to any of the Army's light forces. The Army's interim fix has been to assign an Immediate Reaction Company from anyone of the heavy divisions based in the United States to support contingency operations. The focus of this research will be on tanks in support of the infantry brigades and regimental combat team as a habitual infantry and tank team in combat operations from World War I to Somalia and in simulated combat operations at the Joint Readiness Training Center. Lessons learned from previous wars and subsequent contingency operations reveal that the over arching theme of field commanders was to have an organic tank company assigned to them in all combat situations. They recognized the need for combined arms training and execution along with the benefits of a cohesive team. The results of this research indicate that the light infantry brigades need organic separate tank companies assigned to their MTOE in order to meet their operational requirements.					
15. SUBJECT TERMS Tank battalion; Immediate Reaction Company; Support; Infantry brigades; Joint Readiness Training Center; Lessons learned; Operational requirements.					
16. SECURITY CLASSIFICATION OF:		17. LIMITATION OF ABSTRACT Same as Report (SAR)		18. NUMBER OF PAGES 100	
19. NAME OF RESPONSIBLE PERSON Buker, Kathy kathy.buker@us.army.mil					
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified	19b. TELEPHONE NUMBER International Area Code Area Code Telephone Number 9137583138 DSN 5853138		
					Standard Form 298 (Rev. 8-98) Prescribed by ANSI Std Z39.18

MASTER OF MILITARY ART AND SCIENCE

THESIS APPROVAL PAGE

Name of Candidate: MAJ Richard R. Rouleau

Thesis Title: Have Gun, Will Travel: A Tank Company in the Light Infantry Brigade

Approved by:

_____, Thesis Committee Chairman
Lon R. Seglie, Ph.D.

_____, Member
LTC R. Shawn Faulkner, M.A.

_____, Member
Thomas P. Odom, M.A.

Accepted this 6th day of June 2003 by:

_____, Director, Graduate Degree Programs
Philip J. Brookes, Ph.D.

The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

HAVE GUN, WILL TRAVEL: A TANK COMPANY IN THE LIGHT INFANTRY BRIGADE by MAJOR Richard R. Rouleau, USA, 100 pages.

In 1997 the last separate divisional tank battalion was deactivated, leaving no habitually assigned tank battalion or company to any of the Army's light forces. The Army's interim fix has been to assign an Immediate Reaction Company from anyone of the heavy divisions based in the United States to support contingency operations. The focus of this research will be on tanks in support of the infantry brigades and regimental combat team as a habitual infantry and tank team in combat operations from World War I to Somalia and in simulated combat operations at the Joint Readiness Training Center.

Lessons learned from previous wars and subsequent contingency operations reveal that the over arching theme of field commanders was to have an organic tank company assigned to them in all combat situations. They recognized the need for combined arms training and execution along with the benefits of a cohesive team.

The results of this research indicate that the light infantry brigades need organic separate tank companies assigned to their MTOE in order to meet their operational requirements.

ACKNOWLEDGMENTS

I would like to thank my wife, Clara, and my sons, Christopher and Michael, for their support in allowing me the time necessary to complete this thesis. I could not have completed this thesis without them.

Additionally, I would like to thank my thesis committee, Dr. Lon Seglie, LTC R. Shawn Faulkner, and Tom Odom for their commitment to making this thesis successful. Also the CARL staff for aiding in the collection of research material. I would also like to thank my classmates from small group 4C and numerous combat veterans for providing their feedback during my discussions and especially Major Ray Jackson for his help with editing and Ms Davis.

TABLE OF CONTENTS

	Page
THESIS APPROVAL PAGE.....	ii
ABSTRACT	iii
ACKNOWLEDGMENTS.....	iv
ACRONYMS.....	vii
ILLUSTRATIONS	viii
TABLE	viii
CHAPTER ONE. INTRODUCTION.....	1
Background	1
World War I.....	1
World War II.....	2
Korean War	3
Vietnam War.....	4
Recent Operations	5
Statement of the Problem.....	6
The Research Question.....	6
The Subordinate Questions.....	6
Assumptions.....	7
Definitions	7
Limitations.....	9
Delimitations.....	9
Significance of the Study	10
Summary	10
CHAPTER 2. LITERATURE REVIEW	12
World Wars I and II.....	13
Korean War	14
Vietnam War.....	16
Recent Operations	18
Unit Cohesion	21
Summary	21
CHAPTER THREE. RESEARCH DESIGN.....	23
Summary	26
CHAPTER FOUR. ANALYSIS.....	27
Introduction.....	27
World War I.....	28
World War II.....	32
Korean War	43
Vietnam War.....	52
Recent Operations	60
Comparison	71
Summary	74

CHAPTER FIVE. CONCLUSION.....	75
Introduction.....	75
Conclusions	77
Recommendations	78
Recommendations for Future Study	79
REFERENCE LIST	80
INITIAL DISTRIBUTION LIST.....	90
CERTIFICATION FOR MMAS DISTRIBUTION STATEMENT.....	91

ACRONYMS

APC	Armored Personnel Carrier
AAR	After Action Review
CMTC	Combat Maneuver Training Center
ETO	European Theater of Operations
FM	Field Manual
IRC	Immediate Reaction Company
JRTC	Joint Readiness Training Center
LIC	Low Intensity Conflict
LIB	Light Infantry Brigade
MACV	Military Assistance Command Vietnam
MTOE	Modified Table of Organization and Equipment
NTC	National Training Center
OPCON	Operational Control
PTO	Pacific Theater of Operation
RTC	Regimental Tank Company
SOP	Standing Operating Procedures
SPAT	Self Propelled Antitank
TF	Task Force
TTPs	Tactics, Techniques, and Procedures
VTO	Vietnam Theater of Operations

ILLUSTRATIONS

Figure	Page
1. M 4 Sherman Tank in Schopen, Belgium During World War II	37
2. M 4 Sherman Tank in Gladbach, Germany, During World War II	37

TABLE

Table	Page
1. Division Total Days in Combat Calculation.....	39

CHAPTER ONE

INTRODUCTION

Background

In 1997 the last separate divisional tank battalion, 3rd Battalion 73rd Armor of the 82nd Airborne Division, was deactivated and therefore, leaving no habitually assigned light tank battalion or company to any of the Army's light forces. The Army's quick fix has been to assign an immediate reaction company (IRC) consisting of M1 Abrams tanks, M2 Bradley infantry fighting vehicles (IFV) or M3 cavalry fighting vehicles (CFV) from anyone of the heavy divisions based in the United States to support the Army's light forces during contingency operations. The focus of this research will be on tanks in support of the infantry brigades and regimental combat teams as a habitual infantry and tank team in combat operations (World War I through Vietnam), contingency operations (Panama through Somalia) and in simulated combat operations at the Joint Readiness Training Center (JRTC).

World War I

During World War I, the tanks entered into ground combat operations as a means to break the stalemate that occurred because of trench warfare. As leaders of tank forces professionally developed, tank tactics, techniques, and procedures (TTPs), also improved during World War I. Tank warfare evolved from being a weapons platform that primarily supported dismounted infantry to a major independent maneuver element in World War II

utilizing the infantry in a supporting role of armored forces, combined arms operations in its infancy.

World War II

The infantry divisions of World War II had independent tank battalions working for them in support of combat operations throughout their theater of operation. Because of limited tank assets, general headquarters (GHQ) and corps level maintained independent tank battalions, allocated down to divisions as needed. Routinely, the division pushed these assets down to the infantry regiment level in company-sized units to support regimental missions. The tank companies could find themselves in various mission sets, working for infantry battalions of the regiments or as regimental reserves. However, due to a lack of independent tank battalions assigned to the theater, the infantry divisions and their subordinate commanders never developed tactics, techniques, or procedures as combined arms teams with the tank companies. The regimental combat team commander never had the same tank battalion or company team working for him. Essentially, the regimental commander could not develop the same cohesive relationship that he had with his own battalions, and his soldiers did not perform as well learning new techniques every time they linked up with tanks. Toward the end of the war, it was apparent to some commanders that units that stayed together and trained together executed their missions as a cohesive team.

Upon the completion of World War II, the Army conducted a series of studies and several General Officer Theater Review Boards with various infantry and armor division

commanders, infantry regiment commanders, and independent tank battalion commanders. These former commanders reviewed combat operations AARs conducted in the European Theater of Operations (ETO) and recommend changes to the Department of the Army. The board submitted their recommendations to the Cavalry and Infantry centers for validation. These boards and studies reviewed every aspect of combat operations and support to include utilization and employment of weapon systems, redundancies of those systems, and redundancy of missions, just to name a few. An issue discussed at one of the board meetings was the tank and the several support roles it could perform for the infantry division and allow the Army to drop systems from the division's table of organization. The tank destroyer battalion and the antitank companies of the regiments were eliminated, and the board recommended that the Army should assign a tank battalion to each infantry division and separate tank companies to each of the division's infantry regiments: the birth of the Regimental Tank Company (RTC).

Korean War

The RTC was an added change to the infantry division's organization after 1947. This change came just in time for the start of the Korean War. Initially these companies were only assigned to the divisions on paper due to reallocation and reorganization of forces in all theaters. However, the four infantry divisions assigned to the Far East Command had only one of the tank companies on hand to fill the new authorization. Due to a limited number of transport assets and an immediate need to get combat forces to Korea, initial combat operations in Korea were without tanks. Tanks were shipped over from

Japan and the United States to meet the requirements. Tank battalions arrived on the peninsula just to be parceled out to fill the holes of the regimental tank companies and only then were whole battalions raised for the divisions. It is at this point through trials and tribulations that the Army started to really focus on validating and refining its existing infantry and tank team doctrine developed at the end of World War II. The new field manual (FM) 17-36, *Employment of Tanks with Infantry*, and FM 7-35, *Tank Company, Infantry Regiment* have been in existence for five years now without going through the test of combat. Initially, infantry and tank teams struggled because the leadership had forgotten the lessons learned from World War II and had refused to review the doctrine and put it to use, and the RTCs were not with the regiments long enough to develop the trust, confidence, and camaraderie required of a team. However, after three years of fighting with their respective regiments, the success of these teams validated doctrine and reaffirmed the decisions made after World War II assigning RTCs to the divisions. With the development of improved nuclear weapons maintained by enemies, the Army once again restructured itself eliminating the RTC from the regiments in order to prepare for a new threat, war on the nuclear battlefield.

Vietnam War

Combat in Vietnam once again saw the separate tank company conducting combat operations in direct support of dismounted infantry. Initially, as plans were drawn-up and units were assigned for the mission to Vietnam, the Department of the Army and the Commander of forces in Vietnam decided not to deploy tank battalions to Vietnam,

believing that tanks could not operate in a jungle environment. Things changed when the 173rd Airborne Brigade (ABN) (BDE) deployed to Vietnam as one of the first combat elements. The brigade deployed from Japan with its separate tank company, Company D, 16th Armor, equipped with M113 armored personnel carrier (APC), the M56 self propelled antitank (SPAT), and the brigade's light cavalry troop, Troop E, 17th Cavalry. With the success of Company D, 16th Armor, in combat operations, the Army deployed three other divisional tank battalions to Vietnam in support of their respective divisions and brigades. Once in Vietnam, the tank companies of the deployed tank battalions formed a solid habitual working relationship with their respective infantry brigades, executed infantry and tank team operations throughout Vietnam. The TTPs developed for tanks in support of dismounted infantry stayed consistent until the end of the war. At the end of the Vietnam War, the 173rd was deactivated along with its separate tank company. This left the Army with only two light type infantry divisions, an airborne division with one light tank battalion and an air assault division with attack aviation and no divisional tank battalion.

Recent Operations

Since 1997, the Army has had no habitually assigned tank company to any of the Army's light forces. When the last light tank battalion was deactivated, the Army's interim solution has been to assign an IRC from any of the heavy divisions in the United States. Recent combat operations in Panama, Haiti, and Somalia serve as examples to further reinforce the answer to the question at hand. Only one off these operations reflects a habitual tank company relationship, Panama. Somali and Haiti will show the slow

adaptation of TTPs for combined arms armor and mechanized task forces in low intensity conflict (LIC). These operations also provide excellent examples of what happens when tanks were not present. Trends at the JRTC in which separate armor and mechanized infantry company teams are task organized to light infantry brigades (LIB) at four days prior to the start of the rotation will be used to compare and contrast successes and failures of units that have no habitual relationship, no sense of camaraderie or ownership with the plan or the higher headquarters.

Statement of the Problem

The Army's four light infantry divisions (LIDs) and separate LIBs do not have mechanized anti-armor or infantry direct fire support weapons for combat operations. The Army has attempted to fix this problem by tasking a heavy team from any one of the heavy divisions in the United States to fill this void. This study will attempt to show that an organic tank company assigned to each of the brigade's Modified Table of Organization and Equipment (MTOE) is necessary.

The Research Question

Do the airborne, air assault, and LIBs of their respective divisions and the separate LIBs need an organic tank company added to its MTOE?

The Subordinate Questions

The following is a list of subordinate questions that must be answered in order to answer the primary question:

1. Will an organic tank company improve the LIB's combat effectiveness?

2. Will designating an attached armor or mechanized infantry company team improve the LIB's combat effectiveness?
3. Will placing an armor or mechanized infantry company team under operational control improve the LIB's combat effectiveness?
4. How crucial is the habitual relationship of an organic tank company to a LIB's combat effectiveness?

Assumptions

The following assumptions are made to further support the question:

1. Situations presented at the training centers closely resemble combat operations
2. Units that are assigned together, train together, and live together on a permanent basis perform better than those that are task organized only for the mission

Definitions

Key words used in this study:

Armored Personnel Carrier (APC): An armored vehicle designed to transport troops in combat under armored protection. This will refer to the M113 and M2/M3 family of vehicles.

Assigned: To place units or personnel in an organization where such placement is relatively permanent.

Attach: The placement of units or personnel in an organization where such placement is relatively temporary.

Combined Arms Team: A combat arms team consisting of infantry, armor, cavalry, field artillery, aviation, engineers, and air defense artillery.

Heavy Team: A combined armor and mechanized infantry company team consisting of two tank platoons, two mechanized infantry platoons and a headquarters section.

Immediate Reaction Company (IRC): An infantry and tank team consisting of a mechanized infantry platoon and a tank platoon with a headquarters section and supporting slice elements. This unit is on an eighteen-hour recall cycle to support the XVIII Airborne Corps' ready brigade.

Operational Control (OPCON): Is transferable command authority that may be exercised by commanders at any echelon at or below the level of combatant command.

Organic: Assigned to and forming an essential part of a military organization.

Regimental Tank Company (RTC): A tank company assigned to an infantry regiment consisting of four tank platoons and a headquarters tank section. This is a result of Army restructuring after World War II.

Regimental Combat Team: An infantry regiment that has all organic support elements assigned to it.

M56 Scorpion Self-Propelled Anti-Tank (SPAT): A tracked vehicle with a high-velocity 90 millimeter gun that is air dropped to fulfill its mission in support of airborne soldiers. This vehicle was in limited use during the Vietnam War.

Tactical Control (TACON): Command authority over assigned or attached forces or commands, or military capability or forces made available for tasking, that is limited to

the detailed and, usually, local direction and control of movements or maneuvers necessary to accomplish missions or tasks assigned.

Task Force: A task organized infantry or tank battalion headquarters consisting of a mixture of infantry and tank companies organized for combat. The size can vary from two to five companies.

Task Organization: A temporary grouping of forces designed to accomplish a particular mission. It is the process of allocating available assets to subordinate commanders and determining their command and support relationship.

Thunder Run: A term developed during the Vietnam War and is defined as a technique of using armored on all night road marches firing along side of roads in order to trigger potential enemy ambushes.

Task Organize: A temporary grouping of units designed to accomplish a specific mission.

Limitations

Limitations identified for this research:

1. Data on more recent operations is still classified.
2. Personnel required for interviews may not be available.
3. Data from training centers cannot be unit specific due to the nature of comments may reflect negatively on a current unit.

Delimitations

Delimitations set on this research:

1. A review of operations in Panama, Haiti, and Somalia will only reflect specific engagements in which tanks and infantry worked as teams and when tanks were available but not used.

2. Rotations at the JRTC are used to compare and contrast with examples from World War II, Korea, and Vietnam to validate the research question.

Significance of the Study

The importance of this thesis is the ability to show through historical examples the significance of having a permanently assigned tank company to each of the light brigades and how this relationship can greatly enhance the combat abilities of the brigade, reduce casualties, and further develop the teamwork concept the Army.

Summary

In chapter one the background and definitions necessary has been laid out to understand this paper. There is foundation of understanding the concept for employing the infantry and tank team or regimental and separate tank company from its conception until its demise. This paper will show through a thorough study and review of historical data from specific battles in which habitually assigned tank companies to infantry regiments or brigades performed better than the companies that were assigned temporarily for specific missions. I intend to compare and contrast historical data from World War I through Vietnam, Panama, Haiti, and Somalia the successes and failures of infantry and tank team operations, with current data from the JRTC of tank and mechanized infantry teams working with LIBs. The research should validate the assumption that tank and infantry

teams assigned permanently together and develop habitual working relationships execute their wartime mission as a team.

CHAPTER 2

LITERATURE REVIEW

The primary source of the literature will come from official military data and experiences collected by Army officers from World Wars I and II, Korea, and Vietnam and field manuals published during those time frames. Publications provided by the Center for Army Lessons Learned (CALL) chronicling the most recent operations in Panama, Somali, and Haiti also provide the necessary background required for answering the thesis question: Do the airborne, air assault, and light infantry brigades of their respective divisions and the separate infantry brigades need an organic tank company added to its MTOE. Additionally, articles from various military professional magazines, journals and personal memoirs, from as far back as 1950 to as recent as 2002, and entrees from the author's observer controller (OC) "green book" and past AARs of JRTC rotations as resource material are used. Works by other students in the form of thesis and monographs, to include a personal account of infantry and tank team operations during the Vietnam War, will also provide reference assistance in this thesis. A review of literature that studies the human aspects of teamwork, specifically unit cohesion will be used. Studies conducted on unit cohesion by past and current military leaders and students of military leadership will provide additional data supporting the idea of permanently assigned units are more effective than ad hoc organizations. Their arguments lend validity to the primary question of this thesis, Do the airborne, air assault, and light infantry brigades of

their respective divisions and the separate infantry brigades need an organic tank company added to its MTOE.

World Wars I and II

European Theater General Board Studies (ETGBS) #15, 17, and 48 - 52, The United States Forces (21 February 1946), is a thorough review of World War II operations by boards of combat veteran company grade, field grade, and general officers, of which some drew on their experiences from World War I. The boards reviewed many aspects of combat operations in the European Theater of Operation (ETO) to include division, brigade, and infantry regiment and tank battalion and company reorganization. This is noted in their initial general order “To prepare a factual analysis of the strategy, tactics, and administration employed by the United States Forces in the European Theater” (U.S. Forces, European Theater General Board Studies, report 11, 1945, 1). These detailed reviews provide the necessary baseline used to begin with the organization or birth of the RTC. The changes recommended by the European Theater General Board to the Department of the Army were incorporated prior to the start of the Korean War. A significant point to remember is that not all recommendations were approved, and sometimes the Department of the Army along with the service schools, developed their own solutions to the recommendations by the review boards. Several advocates from the field Army for change in organization, tactics, techniques, and procedures were not shy in putting their thoughts on paper and into print for their fellow warriors to read. Lieutenant Colonel George B. Picket Jr., an infantry officer, wrote an article in *Infantry Magazine*,

“The Regimental Tank Company,” a case for the RTC and separate tank companies, as indicated with this quote: “In the infantry regiment tanks are not employed without infantry support and infantry is rarely used without tank support” (Picket 1950, 3). Lieutenant Colonel Picket effectively used an infantryman’s view and an assessment of some World War II battles to support his argument for the RTC.

FM 7-35, *Tank Company, Infantry Regiment*, defines the doctrine of 1944 for the RTC. Due to constant revision as a result of the Korean War and changes in technology, the Army continued to produce changes to the FM. Change 1 was published on 24 October 1951, and change 2 was published on 14 September 1953. The changes reflect the update in doctrine because of combat operations in Korea. FM 7-35 discusses the organization of the company, the employment of the infantry and tank and the tank and infantry teams in the offense, defense, in restricted terrain, logistics and other operations. The key to FM 7-35 is that it clearly delineates the command and control relationship between the infantry and tanks for certain operations. This FM outlines the training of the infantry and tank teams, to include draft-training schedules, combat checks, situational training exercises, seminars and other details oriented towards the teams.

Korean War

During the Korean War, Armor Officer Advance Course (AOAC) students formed research committees and produced *The Armored School, Committee Research Reports 2, 9, 10, 11, 17, 28, and 35*. Each of these reports was a form of after-action review of operations in the Korean theater of operation and included recommendations to change

MTOEs, TTPs in infantry and tank team operations. As noted from this quote from one of the research reports, “Much of the tank action in Korea was primarily on a platoon or even a single tank basis, and detailed analysis of such action serves little use other than to re-affirm the validity of the most elementary principles of tank employment” (The Armored School, Committee Research Report 11, 1952, 3). The students, all veterans of the Korean War, reviewed such subjects as the employment of armor in Korea, tank battalion and regiment organizations, regimental tank company organization (to include maintenance assets), the effects of elements on tank operations and the use of tanks in the indirect fire mode. These subjects also provide valuable information in supporting this thesis. The students were very meticulous in reviewing specific battles and showing how tank units that fought together are more successful than units that were thrown together at the last minute for combat operations.

Reviews of professional military journals, such as *Armor*, *Infantry*, *Combat Forces*, and *Armed Forces*, reflect various opinions and firsthand insight of the infantry and tank teams and the armor and infantry teams in combat during the Korean War. In 1951, *Armor Magazine* published an article by Captain Robert E. Drake, an armor officer, and a proponent for the regimental tank company. In his four-page article, “The Infantry Regiment’s Tank Company,” Captain Drake goes into detail explaining the need for this company organization in the regimental combat team. Captain Drake covers such areas as unit organization, missions, morale and integration, the effects of infantry and tank teams against the enemy and his role in the regiment as the tank expert to the commander. Captain Drake cited specific battles that his company participated in to support his

argument. As outlined in this quote from a Republic of Korea (ROK) Army commander, “Those tanks spelled the difference in some ten miles of advance per day” (Drake 1951, 15). An article published in *Combat Forces Journal*: “Tanks and Infantry,” in 1953 by Colonel Edward L. Rowny analyzes the tank and infantry team by asking two questions. The first question, “What have training and combat experience taught us?” (Rowny 1953, 11). His second question, “Is the tank, in fact, essential to the infantryman’s mission?” (Rowny 1953, 11). Colonel Rowny goes into extreme detail in answering those questions citing the advantages and disadvantages, in training, combat, logistics, and morale. He also addressed the effects of the infantry and tank team on the enemy. Colonel Rowny made a strong case for assigning tanks to the infantry regiment.

Vietnam War

The United States Army Vietnam’s (USARV) study: *Mechanized and Armor Combat Operations in Vietnam (MACOV)* (1967) provided excellent examples and studies of infantry and tank team operations in the restricted terrain of Vietnam. This report is extremely important in this thesis because it again highlights the initial lack of understanding regarding infantry and tank team operations. The commander of U.S. forces in Vietnam, General William C. Westmoreland, saw no use for tanks in Vietnam to support the infantry. In his mind, the Vietnam War was an infantry war due to the nature of terrain and other factors affecting the mobility of tanks. In his foreword to the report Westmoreland explains the intent of the study indicating that he may have been wrong in making his initial assessment:

This report summarizes the operations and training aspects of the evaluation of U.S. Army Mechanized and Armor Combat Operations in Vietnam (MACOV) conducted during the period 6 January to 28 March 1967. . . . The final story of mechanized infantry, tank, and cavalry operations in Vietnam is still being written--lessons are being learned and new techniques developed during every operation. Each unit must continue to display imagination, resourcefulness, and ingenuity in our training and combat operations. (USARV 1967, I)

Officers from all branches conducted this study at the direction of the Department of the Army per the request of division commanders being instructed to leave their tank and mechanized forces behind at their U.S. bases prior to deploying to Vietnam.

In General Donn A. Starry's book, *Armored Combat in Vietnam* (1980), he reviewed the USARV study and operations, such as Cedar Falls-Junction City, mechanized operations in the Mekong Delta, and other specific missions, assigned armored units to conduct route security and convoy escort in which some cases of light and heavy integration were prevalent and successful. In addition, the sixty pages of notes provided by Frank M. Mantua, a former platoon leader and executive of Company D, 16th Armor, 173rd ABN BDE. His notes from 1968 provide first-hand information on several operations in which his company supported its parent brigade and battalions in combat as well as other joint forces. Mr. Mantua's notes reflect the success of Operation Bolling, an example of the combined arms team. As Mantua noted "The airborne armormen, who along with the 4th Battalion, 503rd Infantry, were conducting Operation Bolling, sized up the situation and immediately maneuvered to outflank the enemy" (Mantua 1968, 3). An example of the reorganization of the Army after the Korean War, to validate whether or not units that are assigned together fight better than those that are thrown together at the last minute. *The Use of Armour in the Vietnam War* (1996) is a study by Brian Ross in which he discusses

the combined arms operations of Australian armor, U.S. Marine Corps' armor, and a few examples of U.S. Army armor fighting in restrictive terrain with infantry. He also briefly discussed some examples of North Vietnamese Army armor operations. Ross's selections identify several "lessons learned" in combined arms operations.

Recent Operations

Center for Army Lessons Learned (CALL) provides the bulk of material required providing a valid assessment of the most recent operations of infantry and tank teams in combat. *Operation Just Cause Lessons Learned*, Volumes I and II, provides insights of combined arms operations in Panama. The review of Panama reflects combat operations and military operations other than war (MOOTWA) with tanks companies of 3rd Battalion, 73rd Armor working for their habitual airborne infantry brigade.

Operation Uphold Democracy, Initial Impressions, and other Uphold Democracy documents provide a thorough review of light infantry and tank operations as well as mechanized infantry operations in Haiti. Key to these reviews is the positive effects of teaming and the effects that the teaming has on the enemy. Other CALL products providing valuable data in this research are the special edition 93-1, *Somalia: Operations Other than War, News from the Front: Somalia update: MOUT* (December 1993), CTC handbook 98-10: *Fighting Light/Heavy in Restricted Terrain*; and several CTC bulletins, trends, and newsletters. These select products provide additional insight on current operations, TTPs conducted at the training centers by units and observations made by the OCs during training rotations. Handbook 98-10 is a collection of data representative of a

special rotation in which two tank companies worked for an individual infantry battalion respectively.

Another great source of information is the handbook, *TTPs for Light Infantry Company Employment of Tank Platoons in Restrictive Terrain*. It was created by I Corps specifically tailored for infantry and tank team operations at Fort Lewis. The armor and Infantry brigades at Fort Lewis, Washington tested the TTPs. All documents mentioned above do not represent the RTC or a tank company that is permanently assigned, but do represent the role of the infantry and tank team and the strengths and weaknesses of a habitual relationship or lack thereof.

The JRTC OC *Green Book*, supports the argument that units that are thrust together at the eleventh hour perform horrendously compared to these units that work together for an entire rotation or come from the same division. These lessons are outlined in several articles written by JRTC OCs published in *Armor Magazine*. Four articles: “Light/Heavy Integration at the Joint Readiness Training Center,” written by SFC Paul E. Thompson; “Armor and Mechanized Infantry in “Built up Areas”; “Armor and Mechanized Infantry Operations in Restrictive Terrain”; and “Mountain Cavalry; “Recon in Built up Areas””, written by CPT Richard R. Rouleau, discuss the TTPs overlooked by LIBs and their supporting tank or mechanized infantry companies and separate brigade cavalry troops during their rotations. A case in point a quote taken from an OC’s green book during an initial entry operation: “if they had only rehearsed this back at home-station” (Rouleau 2001).

The current mindset of the Army is reflected in its most up-to-date FMs. FM developed by the Armor School that breaches the subject of tank and infantry teams include: FM 17-18, *Light Armor Operations* (1994); FM 71-1, *Tank and Mechanized Infantry Company Team* (1998); and FM 3-20.15, *Tank Platoon*, (2001). FM 17-18 is the Army's most current FM that most closely related to the World War II era, FM 7-35, *Tank Company, Infantry Regiment*. FM 17-18 reiterates the need for the infantry and tank teams in the LIBs and shows the relationship of the tank company with the light infantry brigade, to include TTPs. This FM is the most underutilized of the FMs dedicated to tank support of infantry and probably due to the fact that the light tank battalion is no longer in the active army. FM 71-1, the bible for current tank and mechanized infantry company commanders, devotes only an appendix to fighting with light infantry forces. The primary focuses of the appendix are on organization, planning considerations, operations and tasks, additional considerations, and combat service support. FM 3-20.15, the tank platoon's guide, dedicates a seventeen-page appendix to Light and Heavy Operations, focusing on task organization, liaison, operational considerations, and transporting of dismounted infantry. It briefly outlines maneuvering with the light infantry.

The Infantry School's series of FMs briefly discuss the light and heavy integration in appendices and briefly discusses infantry and tank operations in the main offensive and defensive maneuver chapters. The following FMs further supporting this thesis are: FM 7-8, *Infantry Rifle Platoon and Squad* (1992); FM 7-10, *The Infantry Rifle Company* (1990); FM 7-20 *The Infantry Battalion* (1992); FM 7-30, *The Infantry Brigade* (1995). The main point is that the FMs provide the base for doctrine, "the how of fighting." The

Armor School is concerned primarily with tank doctrine and the Infantry School focuses on infantry doctrine.

Unit Cohesion

Leadership: The Warrior's Art edited by Major Christopher Kolenda, provides a vast number of reviews of ancient and modern concepts of leadership, historical case studies, and experiences of leaders. Articles highlighting the effects of unit cohesion in combat as well as in training will be used. Major Kolenda, during an interview passed these thoughts on "The plug-n-play approach to organization that we know from experience is problematic. Plug-n-play briefs well and makes sense in the world of cyber speak but has serious issues in the real world" (2002). His comments refer to short notice task organization without a developed habitual relationship and its effects on unit cohesion. Other studies commissioned by the National Defense University, such as *Cohesion in The US Military*, *Cohesion: The Human Element in Combat* and *Unit Cohesion: A Prerequisite for Combat Effectiveness*, will be used to support this argument as well. It is key to keep the intangible effects of cohesion as part of this thesis because it directly affects how well a team performs its tasks if its members have been together for any long period.

Summary

This chapter gives a basic resource of all the information available on the subject of infantry and tank-combined arms operations. As data was reviewed, starting with the first hand experiences of officers in World War I shaping their review of World War II with the initiation of the *European Theater General Board Studies* reviews, where the Army

identified deficiencies in infantry and tank operations. This leads to the creation of doctrinal manuals and further study. The Armored School, *Committee Research Reports* provides yet another review of operations during the Korean War in which the RTC is in combat with infantry and tank teams. There are several articles written in the professional military journals highlighting those lessons learned. The Vietnam War and the study conducted by MACV provided additional insight into the infantry and tank team, to include notes from a member of the only separate tank company to deploy to Vietnam in support of combat operations. Current operations and those lessons captured by CALL depict the successes and failures of the infantry and tank team, which is when leaders start to see that tanks are no longer assigned to infantry brigades or regiments. The Army's FMs enforce combined arms operations and not the permanent assignment of tanks to LIBs. The FMs do not discuss such issues as cohesion, morale, or other intangibles that were realized in World Wars I and II, Korea, and Vietnam. It is not until leaders see trends at the Army's training centers and through the observations of others captured in articles, that the Army begins to see the results of the lack of a habitual relationship. Despite doctrine that preaches combined arms operations as well as many arguments supporting combined arms operations, the Army fails to practice what it preaches. By understanding the examples of combined arms operations, coupled with the studies in unit cohesion and the additional studies during combat operations, it becomes clear that the habitual relationship developed by a permanently assigned tank company will only enhance the effectiveness of the LIB.

CHAPTER THREE

RESEARCH DESIGN

Research as defined by *The New Merriam-Webster Dictionary* as: “2: studious and critical inquiry and examination aimed at the discovery and interpretation of new knowledge 3: the collecting of information about a particular subject” (1989). The purpose of this research is to answer the primary question: Do the airborne, air assault, or light brigades of their respective divisions and separate infantry brigades need an organic tank company assigned to its MTOE? Secondary questions must be answered to support the primary question. The secondary questions are: Will an organic tank company improve the light infantry brigade's combat effectiveness? Will designating an attached armor or mechanized infantry company team improve the light infantry brigade's combat effectiveness? Will placing an armor or mechanized infantry company team under operational control improve the light infantry brigade's combat effectiveness? How crucial is the habitual relationship of an organic tank company to a light infantry brigade's combat effectiveness? The method of measurement for these questions is whether or not the brigade accomplished its assigned mission and whether or not through research it can be proven that the success or failure is attributed to the questions above.

In order to answer these questions, the method in which to conduct the research must be identified. A combination of the historical research method and casual-comparative method will be used in order to answer the primary and secondary questions. The historical research method as defined by C. M. Charles's book, *Introduction to*

Educational Research (1988), “describes, and often attempts to explain, conditions, situations, and events in the past” (1988, 7). Charles’ method is “the main sources of data (information) are people, and documents for fairly recent events and documents, locales, objects, and their traces for events that either happened very long ago or for which there are no people or documents available (1988, 7).” An example of this method would be to research a specific infantry and tank team battle or engagement during the Korean War and then using those variables identified, compare them to similar actions during the Vietnam War.

Casual-comparative research is defined as: “a type of research used to explore cause and effect in which independent variable cannot be manipulated” (Charles 1988, 10). The desired end state of this research is to determine whether or not historical examples of successes and failures in infantry and tank team operations under certain variables (i.e. habitual relationship and permanent task organization or assignment) can be compared against recent operations. These variables do not exist or in some cases are temporary short-term fixes that result in a solid analysis of the trends depicted. Casual-comparative research follows three basic principles. The first principle is “to identify an existing condition or event of interest” (Charles, 1988, 117). In this case, an example would be light infantry brigade combat team combined arms attack of a MOUT village at the JRTC. The combat team attack of armor or mechanized infantry company teams and the light infantry battalions historically culminate before the objective is seized. The second principle in the casual-research method is “to look backward to try to see what caused the condition” (Charles, 1988, 117). When reviewed, the major trend identified during this

attack is the piecemeal of armor or mechanized infantry company teams and the light infantry onto the objective resulting in a desynchronized effort. This leads to the third principle of the casual-research method, “try to demonstrate, logically, a cause-effect linkage” (Charles, 1988 117). The cause and effect linkage in this example would be that “the armor or mechanized infantry company team and the light infantry battalions had not worked together prior to this operation and had come from different divisions with different standing operating procedures” (Rouleau 2002). There are other variables and details that can be considered, but this is just an example of the approach that will be taken. The next step is to take the results from each period, World Wars I and II, Korean War, Vietnam War, and recent operations and to compare them against each other to determine the common trend. An example of this method of analysis would be to take the example of casual-comparative research method from above, and to apply it to each of the periods identified with similar activities, and then to collect the results and compare them to recent operations in order to answer the primary and secondary questions, ideally the cause-effect and solution.

The topics of regimental tank company, infantry and tank teams, combined arms operations, and unit cohesion were extensively researched and reported on by individuals with first-hand experience, the various Army institutions as well military professionals. The majority of data used in this research is primary and secondary source findings, with some tertiary sources too. These sources are in the form of studies conducted by Army schoolhouses and the individuals involved in those areas being studied, books, military professional journals, magazine articles, and theses. The criteria for selecting the sources

used were determined by the period or era, actions involving infantry and tank operations, cohesion, and whether or not units (infantry and tank) were task organized, assigned, or had a habitual relationship with each other. Using these criteria as a gage for determining usefulness of materials enabled a focused effort in data collection and analysis.

Summary

In this chapter, the method for research and analysis necessary to understand this paper was determined. A combination of historical and casual-comparative research methods is being used to review the primary and secondary sources and data available followed by comparative analysis in order to determine the common trend identified during each time period. This understanding of the linkage of the identified trends will result in the ability to answer the primary and secondary questions. Those questions being: Do the airborne, air assault, or light infantry brigades of their respective divisions and separate infantry brigades need an organic tank company assigned to its MTOE? Will an organic tank company improve the light infantry brigade's combat effectiveness? Will designating an attached armor or mechanized infantry company team improve the LIB's combat effectiveness? Will placing an armor or mechanized infantry company team under operational control improve the LIB's combat effectiveness? How crucial is the habitual relationship of an organic tank company to a LIB's combat effectiveness?

The analysis in chapter four followed by the conclusion in chapter five should validate the assumption that tank and infantry teams assigned as an organic unit develop habitual working relationships and execute their wartime mission as a team.

CHAPTER FOUR

ANALYSIS

Introduction

Chapter four presents, compares, and interprets the data produced by the methodology outlined previously in chapter three. It provides the information necessary to answer the primary question of whether or not the airborne, air assaults, and LIBs of their respective infantry divisions along with the separate infantry brigades, need an organic tank company added to their MTOE. Additionally, the chapter offers evidence on secondary, tertiary and subsequent questions: do organic tank companies improve the LIB's combat effectiveness? Will a designated attached armor or mechanized infantry company team improve the LIB's combat effectiveness: will placing an armor or mechanized infantry company or team under the LIB's operational control improve its combat effectiveness: and finally, how crucial is the habitual relationship of an organic tank company to a LIB's combat effectiveness?

This research project examines historical examples and compares them to current operations in order to answer these questions. It is broken down into six sections with sections one and two covering World Wars I and II, as high intensity conflicts wherein infantry and tank team doctrine/habitual relationships developed. Section three covers the Korean War, a regional conflict in which the Army experienced organizational changes in its fighting divisions, namely the infantry regiment's addition of the regimental tank company as an organic element. Section four covers the Vietnam War, another regional

conflict in which the regimental tank company and infantry regiment organization disappeared, to be replaced by the infantry brigade and the brigade separate tank company and cavalry troop. Also, during this period, we begin to see the return of the division tank battalion as an allocation asset, slicing tank companies to infantry brigades, once again, highlighting the reemergence of the habitual relationship, seen previously in World War II. Section five covers more recent operations, including examples from Panama, and a short review of Somalia and Haiti. Section five also examines rotations at the JRTC. A place where the habitual relationship and organic tank companies fade away and replaced by attached armor or mechanized infantry company or teams, OPCON. Section six identifies both negative and positive trends by comparing each period to examples from current operations, and finally, a chapter summary that segues into chapter five, the conclusion.

World War I

The British and French Armies were the first to introduce tanks onto the battlefield in 1916. They incorporated tanks into their infantry formations as a means to break through the trenches of the German Army. Infantry and tank teams did not begin fighting together as part of the American Army until the American Expeditionary Forces (AEF) entered combat in France in June of 1918. General Pershing, Commander of the AEF, identified the need for tanks in the American Army and directed that a board be set up to study the British and French tanks. The board recommended that a tank department be set up for the AEF, with a chief of tanks, Brigadier General Samuel D. Rokenbach.

The procurement process started with the AEF securing the rights to manufacture British and French tanks in the States. Captain George S. Patton Jr., volunteered for the tank corps and sent to the AEF School at Langres, France, to establish a U.S. Army tank-training program. While assigned in France, Patton published a report highlighting his vision of the tank's role in supporting the infantry. He envisioned the tank being used for five types of missions: clearing wire obstacles, suppressing enemy crew-served weapons and preventing the enemy's infantry from manning parapets after preparatory artillery barrage lifted, helping the infantry secure the objective, guard against counterattack by patrolling ahead of the most advanced infantry positions, and by exploiting the attack supported by reserve infantry. This vision proved to be vital to light tank warfare for the AEF. All of Patton's proposals were accepted by the AEF and the tank training program and corps began to grow, as did several other tank training centers in the United States.

It is important to understand how training of infantry and tank corps troops was conducted in order to understand the relationship or lack of relationship in the command and control structure of these forces during battle and to identify whether or not an attached, organic, habitual, or OPCON relationship was developed. This is especially important when reviewing the relationship of the Tank Corps' separate tank battalions and tank brigades to the infantry division of World War I. All tanks belonged to a separate Corps and were Army troops. For any action, tanks were allocated to the different Corps and to Divisions as considered necessary by Army Headquarters. One of the governing principles of this allotment was that tanks should be used in numbers, or not at all. "The allotment was usually made at the rate of one battalion of tanks per division" (Eisenhower

1932, 1). The two major campaigns involving a significant numbers of tanks showed how successful combined arms operations could be against a well-defended enemy and that success was temporary during small engagements in each campaign.

During the US First Army's first combat action of World War I, at Saint-Mihiel, American forces employed two tank brigades, the 1st Tank Brigade, under the command of Colonel George S. Patton Jr., and the 3rd Tank Brigade, under the command of Lieutenant Colonel Daniel D. Pullen. Patton's tank brigade supported IV Corps' sector and Pullen's tank brigade was assigned to I Corps. Patton assigned one of his battalions, the 344th Tank Battalion, to the 1st Infantry Division with the task of leading the infantry to their objectives. The 345th, Patton's other tank battalion, was tasked to follow the 42nd Infantry Division's initial assault to provide support to the 165th and 166th Infantry Regiments. They were also tasked to provide sixteen tanks as the tank brigade reserve. Up until this point, American tank forces had trained individually as tank units and their training did not involve training with the infantry they would support. In the case of the 344th, they outran their infantry support and fuel while still securing the objective, around the village of Woel, culminating in an unsupported victory against enemy infantry. The 345th failed to provide significant support to the 42nd Infantry Division because they were plagued with maintenance problems and the infantry outran the tank support. In both cases, the difficulties encountered were attributed to lack of coordination between the infantry and tank unit commanders, lack of rehearsals, lack of understanding each other's strength and weaknesses and failure to develop a standard operating procedure (SOP) as a combined arms element.

Later, during the Meuse-Argonne campaign, Patton's tank brigade worked for I Corps and Pullen's tank brigade worked for V Corps. Their support relationship with units in theater changed throughout the campaign. As with the Saint Mihiel campaign, the tanks and infantry moved together with the tanks clearing through the trench area with the infantry close behind. However, once breached, the effects of smoke and fire severely hampered the infantry and tanks cohesiveness during the assault on the German defenses. The tanks bogged down in minefields, got caught in battlefield clutter, fell behind, or just broke down, leaving the infantry to bypass their armored brethren to assault the objectives without tank support, as they always had. Once again, the benefit of bringing tank firepower against an enemy bunker was lost and the infantry had to secure the objective.

The tactics of learning to lift and shift fires, seen today with infantry machine gunners, had not yet been developed with the tank crewman. Lack of communication with the infantry commander and the tank commander attributed to the confusion along with no standard SOPs. Furthermore, there was no habitual relationship with the supported infantry divisions. A case in point, as earlier illustrated, was Patton's brigade that worked for V Corps. During the Saint-Mihiel campaign he worked for I Corps. The benefits of a habitual relationship had not yet been realized at the higher levels; both tank brigade commanders pushed unfamiliar tank battalions down to each of the divisions, within the supported Corps. This turned into an ad hoc organization of tanks based on availability and reliability, reinforcing the infantry commanders' to usually, "plan for the worst and hope for the best." This was illustrated with the 27th Infantry Division, a unit that had never worked with tanks before and did not take any time to rehearse with their assigned tank

battalion. The division and battalion commanders' lack of understanding resulted in absolute failure. The division did not secure its assigned objectives and received so many casualties another division had to replace it on the line. This could have been prevented if a tank battalion or company had been organic to the division and its infantry regiments allowing them to develop SOPs and cohesion.

Major D. C. T. Grubbs, a combat veteran, best summed in up when he noted, "the infantry followed the tanks as closely as possible and made as much use of its weapons as circumstances dictated, but so far as any conventional relations were concerned, none definitely existed" (Eisenhower 1932 page 2). Major Grubbs also believed that the attack of the tank by itself against enemy infantry would be in vain without the infantry's support.

World War II

World War I provided several lessons learned in combined tank, infantry, and artillery warfare that reappeared during World War II. One change centered on creating a divisional tank company for the infantry divisions. This could was perceived as the first step in developing an organic or habitual relationship within the infantry division and a tank company. With this change came memorandums, after action reviews, and general officer review boards from various commands outlining other recommended changes to doctrine and training. Most notably was Major Eisenhower's memorandum for training tanks with infantry. In his memorandum of training he lists the missions assignable to the divisional tank company as: "(1) to support the infantry in the assault of any position when the infantry has been unable to take same without their assistance, (2) to assist in breaking up

hostile counterattacks, (3) for use against an advancing enemy, (4) in exceptional circumstances to aid in covering a withdrawal from action, and (5) to accompany the advance guard when advancing, especially when in contact with the enemy is imminent” (Eisenhower 1932,4). But because of the limited number of tanks assigned to the division’s tank company, the company was kept in reserve until the tanks were required to support the infantry in any one of the five missions.

By the start of World War II, the Army removed the divisional tank company from the infantry division and reorganized the new armor divisions to provide more tanks to the force using GHQ pooling battalions. This situation dictated that the Army did not have enough tanks to fill all the infantry and armor divisions. Pooling gave the theater commander more control in allocating resources as needed. What pooling did not allow for was an organic or habitual relationship that is necessary to be successful and in most cases was a direct cause for the success or failure of a particular operation. Pooling also limited the time available for tank battalions to train with the infantry divisions they would support in combat. On most occasions, GHQ tank battalions would return from battle and refit in route to another battle with a different corps or division. They never had the time to train together in order to develop sound TTPs nor did they have time to rehearse for the upcoming fight. As one officer noted, “It did not permit the tank and infantry units to train together and develop the necessary teamwork prior to combat” (Pickett 1950, 21). This was evident during actions in Italy in 1944 when:

During the course of the attack, the supporting tanks were called upon to approach the position under attack. Infantrymen lying by the road attempted to hand-signal the approaching tanks that the road was mined a short distance beyond. The tanks did not stop for the signal and the first tank was disabled. Later on the tank men

explained they had interpreted the hand warning of the infantrymen as cheering them on. (US Army Ground Force Observer Board, 1949a, A-114-2)

The early years of World War II reflected the overarching discrepancy with infantry and tank team integration. Poor results at the Kasserine Pass between American infantry and attached GHQ Tank Battalions resulted in the Army Ground Forces Headquarters issuing a directive that, “all new infantry divisions train with non-divisional tank battalions prior to deploying overseas” (Greenfield 1946, 326). While this began the start of enforcing combined arms operations training along with operational control and the attachment of tanks, it failed to address the habitual or organic relationship aspect. The term infantry-tank teams sprang from this period and became a common theme from that point on, however, it would take time to further develop.

The landing and break out from Anzio beachhead in Italy began on 22 January 1944 and ended on 28 May 1944. Before the Anzio landing, the 3rd Infantry Division received the 751st Tank Battalion and conducted infantry tank training in Naples to prepare for the attack. The training proved to be successful during the attack at Cisterna and throughout the remainder of the campaign against a well-prepared German defense. As noted, “The 3d U.S. Div and its attached tank battalion had become familiar with this type of defense while fighting with Fifth Army before the Anzio Operation. The experience gained during that time plus their training period was of great assistance in overcoming these obstacles” (The Armored School 1949a, 10). During Anzio, the 751st Tank Battalion was attached to the 3rd Infantry Division for over four months and trained with the unit prior to combat operations. This gave them ample opportunity to develop TTPs for tank

employment, and had worked to build a habitual relationship within the division when employing the 751st. One notable TTP was assigning A Company of the 751st with the 15th Infantry Regiment, B and C companies with their respective infantry regiments which in turn would attach the 1st, 2nd, and 3rd tank platoons with the 1st, 2nd, and 3rd battalions respectively, contributing to their success on numerous occasions while also allowing for the development of the necessary command relationship found within infantry regiments. D company was kept in division reserve or was used to weight the main effort. An analysis of this practice shows the importance of maintaining a team and highlights the benefits of understanding each other's limitations and capabilities.

While the 3rd ID and the 751st were successful with their integration of infantry tank combined arms operations, the 45th Infantry Division and its attached tank battalion the 191st did not fare so well. The problem was that neither the 191st or 45th had ever worked together. In fact, neither unit had conducted any combined arms training. After the failure of the 45th's initial contact on the beaches of Anzio, the division along with portions of the 191st remained in Corps reserve. The unit was not committed again until it started to show a better understanding of combined arms operations. It was not until April that the 191st tank battalion started to see measured success after training and planning together with the infantry. The battalion commander best summed it up when he said: "Thus a successful infantry-tank team attack must depend upon careful planning, close coordination, reconnaissance, proper means of control, the will to fight, and, above all, mutual confidence--the infantry in the tanks and the tanks in the tanks and the tanks in the infantry" (AAR, 191st TB, 1944,2). Further analysis reinforced the importance of units

working with each other over extended periods. 1st Armor Division also realized the importance of close coordination with the infantry. It pulled units off the line to conduct infantry and tank team training.

A similar case can be cited involving the 1st Infantry Division during its preparation for the landing at Normandy. The 745th Tank Battalion was attached to the division in April of 1944, six weeks prior to the D-Day invasion. In a short time the division developed a strong relationship with the battalion and each regiment received its own tank company, with each of the tank platoons being attached to the infantry battalions similar to that of the 3rd Infantry Division. This time integrated together allowed leaders and soldiers of both units to develop strong SOPs and TTPs that proved to be successful when fighting in the hedgerow country, forested areas, and on the streets of European villages. An excellent example of the results of all this time together developing the training, SOPs, TTPs and other methods is best depicted in photos taken during the war (see figures 1 and 2). Both pictures represent the cohesion that was discussed earlier by the 1st ID leadership to be successful in their combat operations.



Figure 1. Source: SC 248304- Members of Company I, 3d Battalion, 16th Infantry Regiment, 1st Division, U.S. First Army, ride on a tank, during their advance on the town of Schopen, Belgium. 1-21-45. Photographer: Sgt Bill Augustine



Figure 2. Source: SC 248463 - Camouflaged with evergreen boughs, tanks of the 1st Infantry Division (745th Tank Battalion), U.S. First Army, rolls through former German block in Gladbach, Germany. Tank is moving into attack position. 3/1/45. Photographer: T/5 Murray Shub.

The attachment of this tank battalion proved to be so important to the commanders in the 1st Infantry Division that it became standing operating procedure (SOP) for four infantrymen to be allocated to the protection of the tank.

The importance of the infantry and tank team was best described by a former infantry officer of the 1st Infantry Division who noted:

The attachment of the 745th marked the first time that the 1st Division had worked with a close support tank unit. At first the infantrymen were not sure what they could expect from the tankers, but early in the hedgerow country there developed a mutual respect which furthered the spirit of cooperation. . . . [T]he infantry showed the tanks that they did not expect them to fight alone and gave them the protection that they needed. . . . [S]uch a team should not be made up on the battlefield but must be trained long before the battle. Its men must know each other's capabilities and limitations. Its officers must have the spirit of cooperation and teamwork. This lesson that can be learned through the experiences of the 745th Tank Battalion and the 1st Infantry Division: that a strong team can be built by the attachment of tanks to the infantry; that the team can be adapted to almost any job and that friendly cooperation is the secret to team work. (Campbell 1947, 9)

It is significant to note that the 745th Tank Battalion was attached to the 1st Infantry Division from 6 June 1944 until 8 May 1945 (see table 1). During these eleven months the 1st Infantry Division was involved in over 292 days of combat with the tank companies of the 745th working for their respective infantry regiments. The 1st Infantry Division also received several other GHQ tank battalions or armor combat commands during that period. Those battalions were attached to the division to act as a reserve, a fourth maneuver element, or as a means to weight its main effort. Of the ten divisions selected for total time in combat in the ETO, only three divisions maintained a habitual relationship with the same tank battalion through the period of June 1944 to May 1945 (see table 1). With a combined total of 2565 days in combat only 560 days were spent in

Table 1. Total Days in Combat in the ETO

Division	Days in combat in the ETO Jun 44-May 45	Days with an attached tank battalion/battalion	Days without an attached tank BN	Days with an attached tank CO in lieu of tank BN	Days with no Tanks
1st Infantry Division	292	330 745th TB	0	0	0
2nd Infantry Division	303	230/741st TB 17/759th TB 10/744th TB	46	11	35
3rd Infantry Division	233	360/756th TB	0	0	0
4th Infantry Division	299	270/70th TB 32/899th TB 10/759th TB	29	8	21
5th Infantry Division	270	130/735th TB 160/737th TB 1/748th TB 6/CCB/7th AD	10	2	10
8th Infantry Division	266	180/709th TB 26/CCR/5th AD 80/740th TB 3/CCR/13th AD	20	0	20
9th Infantry Division	264	30/746th TB 114/Various CC	150	4	150
45th Infantry Division	230	162/101st TB 165/191st TB 6/47th TB	0	0	0
82nd ABN Division	194	20/740th TB 50/Various CC	127	41	132
101st ABN Division	214	20/759th TB 20/Various CC	22	10	192
Total	2565		404	76	560

Army Ground Forces. *Order of Battle of The United States Army, World War II, European Theater of Operations, Divisions*. (Paris, France: Office of The Theater Historian, 1945) A1-A40.

Note:

Information was extracted from appendix A. depicting total number of days in combat and task organization of units at that time.

combat without tanks of any sort. in support of the seven other divisions' combat operations

The 1st and 3rd Infantry Divisions were not the only ones to comment on the successes of the habitual relationship of the infantry and tank team. As one officer noted, "The commander of the 22nd Infantry Regiment of the 4th Infantry Division was completely sold on the idea of riding his doughboys on tanks" (O'Daniel 1946, 45). When referring to his tank company from the 70th Tank Battalion. In his interview to the AGF board he states, "There should be more training of infantry with GHQ tank battalions. They never trained with the infantry back home" (Army Ground Forces Report, 1945a, 6). Additionally, there were disappointments that occurred to divisions that were unable to maintain a habitual relationship with a tank battalion. This was due in large parts to the lack of tank battalions to go around most divisions.

Tank battalions from the GHQ pool that continued to be shifted around, and worked with multiple SOPs and TTPs that were not easily translatable at the eleventh hour. A case in point was the 28th ID when it was attacking the Siegfried Line. The 28th ID received the Third Armored Group consisting of the 741st and 747th Tank Battalions. After three days of attacking with no success and several tank losses, the tank and infantry commanders stopped, assessed the situation, exchanged ideas and SOPs, reorganized, and eventually penetrated the line. In the 196 days of combat, the 28th Infantry Division experienced it never had a continued habitual relationship with any tank battalion of more than 30 days. The confusion experienced by the 28th Infantry Division and its commanders could have been alleviated with an early attachment of the tank units or an

assigned or attached battalion similar to that experienced by the 1st and 3rd Infantry Divisions. One officer described a typical first meeting between a tank company commander and an infantry regiment commander as “Sir, I’m Captain Blank, commanding the Umpteenth Tank Company, just attached to your regiment. Fine Captain, I have a mission for you...but, sir, I think I ought to tell you what my tanks can’t do” (Moore 1945, 18). This further illustrates the distrust between commanders of different combat arms.

The 30th Infantry Division adopted similar TTPs developed by the 1st and 3rd Infantry Divisions. The division with its attached tank battalion and a GHQ tank battalion conducted a series of successful night attacks during the nights of 25-26 and 26-27 February 1945 during operations along the Roer River. In both nights of combat, the 117th Infantry Regiment of the 30th with the 743rd attacked over 8,200 yards captured over 300 prisoners, destroyed five enemy tanks while sustaining a loss of thirty men and four tanks. During the same nights, its sister regiment, the 120th with the 744th Tank Battalion attacked over 4,500 yards and sustained fewer losses than the 117th. As a result of this successful combined arms operation the 30th Infantry Division secured all eight villages it was assigned with minimal casualties. One of the lessons learned from those that participated in the attack was that tanks and infantry must work together for an extended period of time to have a mutual understanding of how each other operates.

Action in the PTO was no different than that in the MTO or ETO. Infantry and tank teams had difficulty from the start trying to organize and reorganize for the various island-hopping campaigns. Infantry commanders had difficulty understanding that tanks

and infantry with the proper TTPs could function effectively in a jungle environment. Their experiences in the PTO almost mirrored those of the MTO and PTO. As noted by Lieutenant Colonel Strand, a member of XIV Corps staff: “The success of the infantry—tank team depends on intensive, thorough, combined training, sound planning and aggressive execution” (1945, 5). Again, Strand recognized that this could only be accomplished when units work together and understand each other’s strengths and weaknesses. Captain Marusek, another combat veteran of the PTO, echoed the same sentiment after his combat experience in Northern Luzon from January through June of 1945 with the 775th Tank Battalion. Marusek notes, “The tank battalion is a normal unit of employment for an infantry division; the tank company for an infantry regiment; and the tank platoon for the infantry battalion (1946, 17).” He credits his battalion’s success on the relationship it had with their supported infantry commanders, as noted by Komer:

So long as it is possible to keep the same tank battalion and infantry division together, and so long as commander casualties permitted the same unit commanders to work together, the understanding of team play increased rapidly. When it became necessary to shift a given tank battalion to support another division, or when cooperating unit commanders become casualties, much of this understanding and team play was lost and a new combination had to start from scratch. (1945, 9)

At the end of World War II several boards and conferences to review combat operations and suggest any changes to the Army’s organization. The most significant of changes based on lessons learned from World War II was the addition of an active duty tank battalion to each division and the addition of a regimental tank company to each of the infantry regiments. Most attendees agreed that the infantry tank team was an important element of combat as noted: “ The development of the vital coordination and mutual

understanding between tanks and infantry at all levels will be a natural outcome of being part of an integrated division from the outset” (European Theater of Operations General Board 1947e, 11). Cohesiveness and the “train as you fight” mentality were key to the success of most infantry tank teams as noted, “the medium tank companies were usually attached, one to each regiment. After the first few weeks it became an accepted practice in all armies, corps, and divisions to attach the same company whenever possible to the same regiment for all operations, offensive or defensive (European Theater Operations General Board 1947e, 4).” The bottom line for commanders of World War II was that they needed tanks for all operations. Ideally, those tanks worked best when they were attached at all levels. Due to the documented success of infantry tank team operations throughout the war, the Army infantry divisions were reorganized prior to the Korean War.

Korean War

The Army went through significant reorganization after World War II, and the infantry division was now organized with an organic tank battalion and the infantry regiments now had their own organic tank company. The regimental tank company consisted of four platoons with total company strength of twenty-two tanks. However, because of shortages and budget constraints the division and regimental tank units were nothing more than paper units. No organic regimental tank company existed at the start of the Korean War and each infantry division had only one tank company assigned from the organic tank battalion. The first divisions that deployed to Korea arrived without tanks. Tanks from the stateside divisional companies were eventually shipped over and designated

as regimental tank companies, or assigned to the organic tank battalions. Over the course of the three years the U. S. Army sent five active and two national guard infantry divisions, the 2nd, 3rd, 7th, 24th, 25th and latter the 40th, 45th Infantry Divisions and also the 1st Cavalry Division. According to each division MTOE, they were to have an organic tank battalion and a regimental tank company. The two National Guard infantry divisions maintained their World War II organization without the organic tank units. It was not until August 1950, almost three months into the war that the first tank battalions arrived in theater, the 70th, 73rd, and 6th. Combat in Korea reminded them that the lessons learned in World War II had to be relearned as noted:

More than once it happened during this campaign that the infantry showed suspicion of mounting tanks; once they were mounted, they over-crowded the entire tank to an extent where the efficiency of tanks and crew were greatly reduced. The next problem was to make them dismount at the proper time when hostile artillery, mortar or small arms fires landed in the area. The majority kept hugging the tanks; the few who did dismount crawled underneath the tanks, eliminating maneuverability. This faulty procedure was caused through lack of instructions from junior officers and noncommissioned officers and resulted in considerable casualties...due to their ignorance of basic tactics of other branches of the service, combined arms operations of this kind were sometimes unsuccessful and resulted in heavy casualties. (Picket 1950b, 9)

It did not take long to for units to adapt to working together. Once the 70th Tank Battalion was attached to the 1st Cavalry Division it was immediately parceled out to each of the cavalry regiments to act as regimental tank companies in support of the defense of the Pusan Perimeter. The other divisions deploying to Korea adapted this TTP as well. A key point to note is that each of the organic division tank battalions was a heavy tank battalion used doctrinally to exploit the success of the regiments with their light tanks. Due to the lack of mounted mobility of the infantry it was easier to push the division assets

down to support the regiments than it was for the division to try to maintain a large mobile reserve.

Generally the heavy tank battalions were division assets to be allocated to weight the main effort or were committed as needed. Understandably, the regiments experienced some growing pains initially with these units. In the first three months since the arrival of tanks to the war, no strong habitual relationship existed between the infantry and tank team. The tank battalions were stateside units and were sometimes allocated to support ROKA divisions or sister divisions during operations. Another point that distinguished the Korean War from World War II was that there were no GHQ tank battalions to augment division operations. The tank battalion's uncommitted fourth company remained available to support other divisions and Corps operations as required. This ad hoc organization often caused problems as noted in this research report: "The order was given with only enough advance notice for the tank leader to order his unit to mount up and follow him" (The Armored School 1952b, 108). The regimental commander could always count on having his RTC and the battalion commanders could count on having their tank platoons if the division attachment was taken away since there was a regimental tank company with each of the infantry regiments. It became general practice that if the regiment received a division tank company, it would be used to support the regiment's main effort. And in most cases, the division, identifying the importance of the habitual relationship, continued to send the same tank company to the same regiment. This further strengthened the bond between the commanders and the men, and streamlined the troop leading procedures of each unit. This was primarily due to organic relationships forged in combat. SOPs were established

making it easier to communicate and effectively operate. This was not always the case, but it proved to be more often than not. As Captain Drake, a former RTC commander, pointed out:

The ROK regimental commander asserted that those tanks spelled the difference in some ten miles...in the regimental tank company we have a unit that is already integrated into the team. This situation averts last minute coordination difficulties that invariably arise when orders are issued hastily. I know of few instances in Korea where the attack plans allowed sufficient time for prior planning in which to enable a new team member to be properly integrated into the team. . . . [A]s part of the regiment, my tankers knew the battalion and company commanders throughout the regiment. (Drake 1951, 15)

Men shared the same chow, fought on the same ground and required one another for protection and mission success. In Captain Drake's argument for retaining the regimental tank company he cites his own personal experience on two separate occasions in which his company, the 31st Infantry Regimental Tank Company, ensured the success of the infantry he supported. An example of this occurred while the 31st Infantry Regiment was in defensive positions along the Korean front lines. The Chinese attacked at midnight on the 27th of November 1951 and were able to isolate each of the regiment's battalions. The regiment responded with a RTC task force comprised of infantrymen from the regiment's antitank platoon, engineer support and others counterattacked and reopened the lines of communication (LOC) to the battalions by the next evening. The regimental tank company commander attributed their success to the habitual relationship he had as an organic member of the regiment, as noted here: "had my company not been integral to the regiment, I doubt that armor would have accompanied the regiment into this terrain" (Drake 1951, 17). This case further highlights the value of an organic relationship as

opposed to an ad hoc attachment trying to react to a situation. It stands to reason that the regimental commander had confidence in his RTC commander and gave him the counterattack mission with minimal guidance and an ad hoc force.

Successful integration within a regiment was not only limited to the 31st RTC. The 89th Tank Battalion of the 25th Infantry Division also played an instrumental role in the breakout from Chinju. Company A was attached to 3rd Battalion, 35th Infantry Regiment in order to support its crossing of the Han River. Leaders attributed the success to the coordination between the tankers and the infantrymen during the three months of fighting as an integral part of the 25th Infantry Division and the 35th Regimental Combat Team (RCT).

A case in which the attached relationship did not work occurred between 21 and 26 September 1950 when a platoon from the 70th Tank Battalion's C Company, was attached to 3rd Battalion, 7th Cavalry otherwise known as Task Force (TF) Lynch. The task force was formed at night on the 21st to attack objectives in route to linking up with the 7th Infantry Division's 31st Infantry Regiment. The platoon moved north along its assigned route with the infantrymen behind but at some point, the tank platoon started to out-distance the supporting infantrymen. After eleven hours and 102 miles, the tank platoon made the linkup without TF Lynch. The battalion commander criticized the platoon leader for leaving the task force behind and was suspected of disobeying orders. He later stated that he and the members of his platoon were told to move at tank speed to make the linkup and the investigation determined that there had been a misunderstanding. One can assume that had the platoon leader been an organic member of the organization questions

or other issues with the orders would have been worked out prior to movement.

Unfortunately, not all leaders were advocates of the organic relationship of the regimental tank company.

Within the first few months of the war, newly assigned regimental tank company commanders were being fired by their infantry regiment commanders for what commanders perceived as being “nonteam players.” However, these firings occurred within the first few months and became less frequent over time up until the end of the war. As in World War II, it was not until Army units began fighting in the KTO that the relationship between the regimental commanders and the attached tank company commanders and their men developed. These relationships developed over a course of several months and years. Initially, each of the regimental commanders deployed from home station with their own organizational team minus their paper regimental tank companies. Thus, the infantry regiment commander was able to develop his subordinates in a manner to support his goals, unit cohesion and team building. It is only human nature to suspect what is not the norm. As was stated earlier “the umpteenth tank company commander” would wear thin on a regimental commander with infantry platoon leader or company commander experience in World War II. Relief is not unnatural under stress of combat when a new tank company commander shows up late to the order. Only an organic relationship with the tanks supporting their infantrymen and the teams that were so successful at the end of World War II can reduce such friction. Indeed, that was the reason the Army established a RTC. If the Army had truly practiced as intended by the existing reorganization of the infantry divisions, then this would have cleared up the

misunderstandings and misperceptions of tank employment. 2LT Harper of the 72nd Tank Battalion summed it up best when he stated: “In many cases, unfortunately, the regimental commanders relieved armor officers who commanded tank companies and replaced them with infantry soldiers, because they found that infantry officers had no preconceived ideas of the proper employment of armor were capable of a higher degree of cooperation in the misuse of tanks than were armor officers” (1953, 13).

Other units were more successful at integrating tanks with infantry. The 38th RTC is a shining example of a unit able to overcome the inherent problems of working with infantry. As noted by a former officer of the regiment: “In Korea, not a single combat action of the 38th Infantry Regiment during my tour with it failed to be enhanced by the action of its organic tank company” (Rowny 1953,12). This again reinforces the importance of teamwork and understanding capabilities and gives the infantry regiment commanders the immediate use of his big guns and his infantrymen are confident in combined arms operations or infantry tank team operations. By having the RTC, it alleviated the necessity for coordination with a higher headquarters concerning the infantry and tank team training and defuses those training distracters caused by a higher or adjacent headquarters when executing training. This point was further highlighted when a company of the 72nd Tank Battalion, the organic tank battalion of the 2nd Infantry Division, was sent out to coordinate for an attack with one of the battalions of the division. Because this was the division’s organic tank battalion and not the RTC of the battalion’s regiment, there were some coordination problems. Late arrivals lead to poor planning and this was no exception. The standard problems involving attachments arose: they did not get maps or

radio frequencies, had no time for reconnaissance, and were poorly integrated. Over the course of the eight days' combat, and tankers and infantrymen grew more familiar and ultimately left each other with a greater appreciation for each other's capabilities and limitations.

Another example of the need for unit cohesion involved a platoon of one of the 3rd Infantry Division's RTC that was given the mission to support an infantry battalion's attack. The infantry battalion commander did not fully understand the capabilities of the tanks and was not inclined to use them in direct support of his battalion due to what he thought to be extremely restricted terrain. The tank platoon leader, after a foot reconnaissance, was able to convince the infantry battalion commander of the platoon's capabilities and was able to assist the infantry battalion in securing its assigned objectives over a three-day period. It can be said that the joint or combined efforts were instrumental in making the attached and habitual or organic relationship work and his understanding the role of the RTC as it applies to the regimental tank company's doctrine greatly enhanced the argument for retaining the RTC. The platoon leader later cited in a letter to his father:

As a result of those three days, the 1st Battalion is extremely pleased. . . . [T]he 1st Battalion is not only far in front of the unit on both flanks, but is even farther ahead of its own schedule. Heretofore, they forgot almost completely about the attached tank unit; now they are beginning to get some real respect for Armor--including sending me messages when the radio is out and treating me as a tactical armor adviser, which is probably the best compliment the Infantry can pay Armor. (Keller 1951, 13)

This platoon leader displayed the utmost confidence in his ability and the contributions of his platoon to the regimental combat team and the infantry battalion he

was supporting, clearly showing that unit cohesion can only be achieved through an organic relationship.

At the end of the Korean War a group of Armor Advance Course students, all former Korean War veterans, developed a survey as part of a research project to determine the feasibility of a standard tank company for both the division tank battalion and the regimental tank company. The students sent the survey out to the infantry regiment and tank battalion commanders and others to also determine the feasibility of the regimental tank company and the division tank battalion and its impact on their units. Of the 298 questionnaires screened by this group, 46 percent had had combat experience with these types of units. 69 of those who responded were regimental commanders, of those, 64 percent wanted an organic tank company and 22 percent replied that the missions could be accomplished with an attached company. The report noted, “most commanders were of the opinion that their regimental tank company was their most important weapon” (Armored School 1953b, 68). Additionally, the majority of those that responded both infantry and armor commanders were in favor of retaining the RTC and the organic tank battalion. As noted in the summary of comments from the same survey, “the comment was frequent that we should not remove the tank company from the regiment. The advantages of joint training and a feeling of comradeship developed between infantrymen and tankers in the same far outweigh the disadvantages of logistics” (Armored School 1953b, 69). This was also in response to those commanders who favored attached over organic; their fear of the logistics tail associated with tanks.

Further analysis of the actions of the RTC and the organic tank battalions during combat in Korea show that the majority of the operations were less likely to pose confusion with an organic element as opposed to an attached element that may or may not have had a habitual relationship. Despite the successes of the regimental combat team; the Army dropped this organization in favor of the brigade. The brigade did not include a separate tank company. The only brigade to have a separate tank company was 173rd Airborne (ABN) Brigade (BDE). This brigade would be the first US combat force deployed to Vietnam.

Vietnam War

The Army deployed the “Sky Soldiers” of the 173rd ABN BDE from Japan to Vietnam in 1965. This brigade was the only American Army brigade to have its own organic tank support, D company 16th Armor. With the exception of the 173rd, units deploying to Vietnam again encountered the same problems of infantry armor integration as was experienced in World War II and Korea.

D company deployed with the M56 Scorpion SPAT. Due to the poor reliability of the SPAT, the company used the M113A1 APC as an interim vehicle pending its transition to the M551A1 Sheridan tank. However, it was equipped with the APC during most of the war, which still employed tank company tactics. Initially, the commander of forces in Vietnam saw no need for armor or mechanized forces in the jungles of Vietnam, ignoring the lessons from World War II in the PTO, and Korea. Commanders in those past conflicts needed for tanks at the regiment (now brigade) regardless of the theater,

including the villages of Europe, the mountains and rice fields of Korea, or the jungles of the Pacific. Only after the Marine Corps deployed with its habitual armor showed that combined arms was still important did some Army infantry division commanders call for their own armor. That prompted the commander of forces in Vietnam to direct a feasibility study in 1966 on the use of tanks in Vietnam. In all, the Army eventually deployed three organic divisional tank battalions; 2nd Battalion 34 Armor of the 4th Infantry Division; 1st Battalion 69th Armor of the 25th Infantry Division; and the 1st Battalion 77th Armor of the 5th Infantry Division (Mechanized), which deployed with 1st Brigade. The Army also deployed several cavalry units: one cavalry regiment; the 11th Armored Cavalry Regiment (ACR) and six division armored cavalry squadrons and numerous separate cavalry troops. As in World Wars I and II and Korea, the habitual relationship experienced with the division's organic tank battalion to its supported brigades experienced the bumps and bruises associated with that of a nonorganic relationship. The lessons forgotten were once again relearned and operational control of tanks to other divisions because the norm due to the lack of significant armored forces. In addition, its commander had declared the Vietnam War an infantrymen's war and therefore leaving the division tank battalion headquarters as a force provider and trainer than a combat force. Only on a few occasions was the battalion given missions. Only the cavalry units regularly experienced combat operations as a maneuver unit. Once again, a regimental or separate tank company was needed to support combat operations of the airborne, air assault, and light infantry brigade.

The 173rd ABN BDE was organized on the island of Okinawa in 1963 with two infantry battalions, 1st and 2nd battalions 503rd infantry, E/17th Cavalry and D/16th

Armor, and other support units. The brigade did not deploy to Vietnam until 1965. It therefore had over two years together sharing the same chow, workspace, and friendships to develop the cohesion necessary to fight. That is a far cry from the habitual relationship of a standard infantry brigade with an attached tank company from the division's organic tank battalion. They were probably on opposite sides of the installation and are lucky if, they have gotten together during a field exercise. To further establish its relationship with the infantry, each of the tank platoons had a habitual relationship with a specific infantry battalion and cavalry troop. The brigade ultimately grew to four airborne infantry battalions with an Australian light infantry battalion. Because of the delays in deploying armor units from the states, D/16th was over-tasked and overworked supporting other units outside the brigade during combat operations.

On several occasions the company, now equipped with M113s, found itself as a heavy weapons company employing tank company tactics, not only supporting the brigade, but also corps and field army operations requiring armor support. On one such occasion, the company and E/17th were temporarily placed under operational control (OPCON) to the Army of the Republic of Vietnam's (ARVN) 47th Infantry Regiment during the battle of Tuy Hoa North. The 47th, along with D/16th, and E/17th, was given the task of seizing three villages designated Nihn Tin 1, 2, and 3. During the attack on the Nihn Tin 1, the first village, the 1st and 2nd platoons of D/16th overran the enemy positions on the outskirts of the village and while attempting to pursue the enemy into the village, outran their reluctant ARVN infantry support. The company had to stop and regroup with the infantrymen, who allowed for the enemy to escape into the other two

remaining villages and the blocking positions set by E/17th and 3/D/16th. For the assault on the second village, Nihn Tin 2, the D/16th commander consolidated the company for the attack and was able to drive the enemy from the village with little to no support from the 47th. The company commander's request for American infantry "Sky Soldier" support was denied on several occasions. Of significance is the fact that the A company commander 4/503rd Infantry, not involved in D/16th operations put his company in pick-up zone posture (PZ). This was due to his a sense of loyalty to his fellow "Sky Soldiers." This strong example of initiative on the part of the A company commander was only possible because of their commitment to each other as "Sky Soldiers". The final village Nihn Tin 3 provided the greatest of challenges for the armored "Sky Soldiers". It was the most heavily defended and best prepared since it was the last village and the enemy had time to prepare while the fighting was going on in the other two villages. The company attacked with one infantry battalion in support. Upon receiving intensive fire from the village and rocket-propelled grenades (RPG) the infantry battalion displaced back leaving the armored vehicles unsupported. Due to the lack of infantry support to protect the vehicles, the company lost two vehicles to RPG close fire. This caused the D Company commander to dismount the odd man of each vehicle to provide dismounted protection as the company moved forward. Although the company defeated the two enemy infantry battalions, the 5th Battalion 95th North Vietnamese Army and the 85th Local Force Viet Cong Battalion, it was unable to seize the village and was ordered to displace to consolidate and reorganize. In this attack, the "Sky Soldiers" of D Company, 16th Armor was credited

with killing over 137 enemy soldiers. D Company lost only eight soldiers killed, but over 50 percent of the company was wounded.

There are several points to be made from this battle. The first one again is the attached verses the organic relationship of a unit. It is clear that an attached unit does not receive the same commitment as an organic unit. The 47th had no emotional attachment to the tank company. There was no sense of ownership; they did not share the same motor pool or barracks nor did they share the same foxhole. The tank company of the 173rd ABN BDE, however, had a strong bond to its sister units; the company commander from the 4/503 was prepared to go to the aid of fellow Sky Soldiers in danger. Behind the scenes you have the senior NCOs of the brigade working together as noted: “the company 1SG, who with other senior NCOs of 4/503rd humped ammo for re-supply (Mantua 1968, 5) to the tank company during the fight, a sterling example of teamwork. In contrast, the 47th did not achieve the proficiency of training with armored forces that’s exhibited in units that have an organic relationship. Although D company 16th Armor did not seize the last objective, the support it received from the rest of the 173rd ABN BDE makes a strong case for an organic relationship. The entire process is streamlined when units understand each other’s strengths and weaknesses. Units that train and live together will instinctively fight better together. That has been the case throughout this thesis beginning with World War I and further highlighted by a Korean War commander who said: “Tank-infantry teamwork is not achieved by merely talking about it. Each new replacement, both officer and enlisted, must realize the capabilities and limitations of both the tank and the infantryman. Most of all the infantryman must have the confidence and knowledge of what

the tank can do for him” (Armored School 1953d, 15), and an organic unit that has control on its replacement flow can best achieve this.

The 25th Infantry Division was the first Army division to deploy with its organic tank battalion and its armored cavalry squadron to Vietnam. The 1st Brigade’s mission was to conduct search and destroy operations, code named Operation Circle Pines. The brigade task organization consisted of the 1st Battalion 69th Armor, 1st Battalion 5th Infantry (M), the 1st Battalion 27th Infantry, and other attachments to include A Troop 3rd Squadron 4th Cavalry. It is key to note that the brigade was deployed to Vietnam with the tank battalion from the division as an organic element. The battalions were further tasked organized into armor, mechanized infantry and light infantry task forces. The success of this operation was due to a habitual working relationship that was developed over several months of training and was best summed up by the brigade commander:

This operation was the brigade’s most successful to date in terms of Viet Cong killed and material captured or destroyed. It also marks the first employment in Vietnam of the 25th Division’s armored battalion, which, very effectively combined with mechanized infantry and regular infantry units plus a reconnaissance troop. The effective use of a combined arms task force will not only prevent friendly losses but will inflict maximum destruction on VC forces and fortification. (Oldinsky 1976, 35)

Unfortunately, there was a lack of armor in Vietnam, and because of the recent successes, armor units were in high demand by every division, corps and field army headquarters. This led to significant logistical problems in the armor battalions, when tank companies were placed under operational control of brigades outside the range of division logistical support. Only three divisions deployed with their organic battalions they, along with the tank battalion headquarters, were the only ones capable of supporting them. At the

high point of troop strength in Vietnam, the U. S. Army had a total of eight divisions deployed, of which only three had organic tank battalions and the capabilities to support them. Because of this lack of armor it became the norm to send a tank company to a brigade, which in turn would send a platoon to a battalion, much like what occurred in World War II and Korea. Because of the decentralized operations in Vietnam, the battalion commanders further divided the tanks and it was not unusual to find a single tank working with an infantry platoon or company. Obviously, there are several inherent problems with this method. First, tank battalions and the divisions that own them are the only ones with logistical infrastructure to support them. When considering the size of a division area of operation and the splitting tank companies to other divisions, the support distance is increased at least three-fold. Tanks can potentially be left out alone because the necessary maintenance assets maybe days away as one veteran noted, “being part of the 3rd Brigade of the 4th Infantry Division actually hampered our operation since our logistics was handled by the 4th ID although we were a hundred miles away attached to the 173rd Airborne. On one occasion we asked the infantry supply people for 90mm main gun ammunition and they sent a tractor-trailer load of 90mm recoilless rifle rounds. Needless to say, we were not amused by that” (Smith 2002). Secondly, the organic or habitual relationship that has proven to be successful in previous wars was no longer applicable. The tank company and supported infantrymen were back to square one developing TTPs that may work in one division but not another and there is no sense of loyalty or ownerships as exhibited by the “Sky Soldiers” of the 173rd ABN BDE. Had all divisions deployed with an organic tank battalion the LOCs would have far exceeded the capabilities

of the logistical support of the division and the tank battalion headquarters due to the resource requirements of the tank battalion. Remembering earlier that the primary function of the division's organic tank battalion was to exploit the successes of the infantry in mass and when required, provide direct support to the infantry brigades. Even with an attached tank company from the division's tank battalion, as pointed out earlier with the actions of D/16th Armor, no one loves the attachments like their higher headquarters do. To further illustrate this point of over extension of the tank company, at one time during the war a single tank company, C company, 2nd Battalion, 34th Armor was allocated to the I Corps in another sector: "Company C at one time was split between four different divisions" (Oldinsky 1976, 59). After further research, Oldinsky identified that only one of the four divisions had the capability to support the attachments and that was through the division's cavalry squadron. Had each infantry brigade deployed with a tank company of its own, the problems identified above could have been prevented. Another negative example which further reinforces the argument for the brigade tank company can be found during combat operations with the 25th Infantry Division and a supporting tank battalion, 2-34 Armor which was not their organic tank battalion. A tank platoon from the battalion was attached to an infantry battalion, which in turn attached individual tanks to the rifle companies, and the following ensued,

While deployed in a marshy area, this tank became mired in the soft ground. Attempts by the tank to free itself only resulted in sinking deeper in the mud. Lacking a tank recovery capability, the infantry left a small security element and moved on. . . . [I]n their effort to protect the tank, the infantry had not deployed a sufficient distance to preclude anti-tank fire. The Vietcong gunner hit the tank with an RPG round from the jungle and penetrated the turret detonating the tank's basic load of main gun ammunition. The tank was destroyed. (Oldinsky 1976, 51)

Not only were there not enough tanks to go around but also the leaders ignored the doctrine developed over a course of three wars of how to properly employ armor and infantry together. This situation could have been avoided with the addition of the brigade separate or regimental tank company, as in the case during the Korean War. And if the regiment's or brigade's tank company was stretched too thin, the division commander should have been asked for additional support from the division tank battalion. Just like in World War II when the Corps or the Division commander saw a need for additional tanks, they generally came from the GHQ battalions. Again, that is why the Army reorganized its infantry divisions with an organic tank battalion and a regimental tank company or in the case of the 173rd a separate tank company. A total of eight divisions were deployed to both Korea and Vietnam. Yet in Vietnam the Army deployed only three tank battalions instead of the six deployed to Korea, despite the lessons learned earlier. A brief review of Marine Corps operations during this time period also revealed similar circumstances and better results in the employment of tanks while supporting infantrymen, especially in built up areas like Hue City. After Vietnam the Army reorganized itself once again.

Recent Operations

Operation JUST CAUSE was the first combat operation since Vietnam in which the last active duty organic divisional tank battalion, (3rd Battalion 73rd Armor) participated. This airborne tank battalion of M551A1s experienced several changes in how it operated over the last fifteen years prior to its deactivation. At one time the battalion of four tank companies was considered a Corps asset and could plan on having each of its companies

placed under operational control of anyone of the Corps' light divisions; one company with the 82nd Airborne Division, one company with the 10th Mountain Division (LI), one company with the 101st Airborne Division (Air Assault), and a company with the 7th Infantry Division (LI) if required. This changed as the battalion found each of its companies attached to one of the three brigades of the 82nd with D company as the reserve company that would support any of the other divisions within XVIII ABN Corps.

Operation Just Cause was another example of how important the organic verses all other relationships are and how there were not enough tanks to go around. Fortunately, because Just Cause involved a smaller area of operation, some of the pains experienced in Vietnam were avoided, such as long LOCs and several different supported divisions. In November of 1989 a platoon from C company 3-73 Armor, called Team Armor, with required command and control and support elements, deployed to Panama in support of the 193rd Infantry Brigade (Separate) (SEP) and the 4th Battalion 6th Infantry (M) from the 5th Infantry Division. The platoon was supposed to provide armor support to the brigade as required. The rest of C Company was part of the Division Ready Brigade (DRB) back at Fort Bragg, North Carolina awaiting deployment orders. Due to the secrecy of the mission, the tanks in Panama could not be moved to conduct rehearsals with the brigade infantrymen and their leaders. This again sounds all too familiar, a technique the Army has now spent the last three wars learning lessons from and on several attempts tried to prevent, an ad hoc unit. At the outbreak of hostilities this platoon was OPCON to 4-6 Infantry and established battle positions before the piece-mealing of its tanks. Due to the shortage of tanks the plan called for each battalion of the DRB to receive a section of tanks

and the remaining two company tanks would establish a blocking position. The Team Armor platoon was further sub-divided by the TF 4-6 S3 to make up for his unit's lack of firepower. He controlled a single tank with two U.S. Marine Corps light armor vehicles (LAV). This element was used as a mobile reserve and quick reaction force as needed. The Team Armor platoon leader and his tank were paired up with another LAV and OPCON to D company 4-6 to secure the Commendancia and later this element too would be OPCON to another unit, 1-9th Infantry, 7th Infantry Division for its assault. Additionally, as the operation continued the company commander was routinely tasked to send sections in support of convoy operations, cordon and search, checkpoint operations, and in addition to conducting tank direct fire support to the 82nd ABN Division's battalions. His company also provided section support to the 1st Ranger Battalion, the 7th Infantry Division elements and the 193rd Infantry Brigade. From 19 December 1989 until redeployment on 9 January 1990, C company or elements of the company were OPCON to a division, a separate brigade and a ranger battalion outside its normal habitual relationship. This proved to be challenging to the airborne tankers and the supported infantry. Neither 193rd, 7th ID, nor 1st Ranger Battalion had worked with tanks and neither organization had tanks organic to them, thus in some cases they did not possess the necessary knowledge or TTPs to work in a coordinated effort. In most cases, infantrymen continued to move across open ground without using tanks for protection, primarily because supported units did not have a clear understanding of what the tank could do as noted by the tank company commander in three of his observations after the invasion,

Talk with attachments that are not accustomed to working with you (e.g., Marines), make sure you understand each other. . . . Junior officers and NCOs

must know and understand the capabilities of their troops and vehicles. It is not unusual for a tank commander to be the armor expert and advisor for an infantry battalion. Be assertive; let the infantry know what you have and what you can do for them. Do not forget to let them know your logistical requirements. . . . Dismounted security is extremely important. Let the supported infantry know that you need 360-degree dismounted protection. (Sherman 1990, 14)

These misunderstandings could have been prevented with the assignment of an organic tank company to each of the brigades. Although there was no significant armor threat the benefit of having tanks and their effect on the enemy was immense when the company commander had to send a tank section to rescue soldiers that were pinned down by snipers. Once the tanks showed up the sniping stopped. It later became routine to use the tanks, as a show of force. If the Army had remembered its lessons learned tanks would have been part of the organization and a show of force would not have been necessary because the tanks would have been an integral part of the operation.

When 3-73 Armor was deactivated the Army instituted the Immediate Reaction Company. The IRC was intended to fill the gap. Giving the light organizations a rapidly deployable armor team. The IRC a heavy company team of the 24th Infantry Division (M) (later reflagged as the 3rd Infantry Division (M)) is OPCON to the 82nd Airborne Division's division ready brigade during that brigade's DRB cycle and is replaced with another IRC when the DRB is changed out; both units coming from within the same Corps, XVIII ABN Corps. However, due to an increase in OPTEMPO the IRC has also come from the Ist and IIIrd Corps. This means a heavy company team from armor or mechanized infantry division from a different Corps supports an airborne brigade during the initial phases of a contingency operation. The rest of the armor or mechanized infantry

battalion task force follows when the rest of the division is deployed. If a light division deploys as a relief in place force, the heavy task force from one of the three corps still has the same problem, no working relationship. Instead it is the same ad hoc or pooling effect first attempted in World War II and was deemed unsuccessful by the Army leadership. These units receive no prior infantry and tank team training prior to the deployment and the chain of command for both organizations are located at installations that are anywhere from 500 to 3000 miles apart. The only training any of these units might receive with a heavy team is at the JRTC and that training is with armor or mechanized company team that could not support real world contingencies. The Army was well aware of this fact. It had hoped that the 3rd Infantry Division could fulfill this obligation as noted by then Chief of Staff of the Army, GEN Reimer during an interview, “we felt that once we take the Sheridan out of the 82nd we could combine [the 82nd] with . . . [elements], from the 3rd Infantry Division as a heavy package” (Naylor 1996, 14). This proved to be an invalid assumption due to an unforeseen high tempo and as other combat veterans have alluded to the organic relationship is a must to solidify the benefit of combined arms operations in training and then in combat. Operations in Somalia would be the Army’s first real combat test of the IRC.

Operation Provide Hope started as a humanitarian assistance operation in Somalia that later required armor support from coalition forces to aid the Army Rangers. A result of this action required the IRC and TF 1-64 Armor of the 24th Infantry Division (M) to deploy to Somalia and remain there until the return of US forces. These forces encountered many challenges when working together. Although the missions conducted by

the armored forces were similar to those in Panama, the challenges were compounded because it was a different type of armor unit. The armor task force elements patrolled with light infantry forces of the 10th Mountain Division (LI), as well as cordon and search, convoy escorts, and checkpoint operations. But these tankers and mechanized infantrymen were used to working with one another as a heavy battalion task force on the sands of the national training center. This was an ad hoc plug organization made up to fill the gap of the lack of an armor force within the light infantry organization. The lessons learned were similar to those encountered by the 3-73 Armor in Panama when working with elements outside the division. They could have alleviated with an organic tank company in the brigade. The IRC deployed from Georgia without any prior training with the light infantry forces in a low-intensity conflict. The light forces were not prepared to provide the necessary support required to maintain the heavy forces and having different SOPs only added to the problems. One of the lessons learned was that light and heavy units did not function as a synchronized team. Each unit had difficulties in understanding each other's limitations. This impacted the leaders ability when trying to command and control. Another difficulty was in trying to bring to bear the full ability of the combined arms fight without causing injury to ones own forces. The requirement of Bradley dismounts increased as a result of light forces not understanding the limitations of the Bradley and tank. In other words during cordon and search missions the mechanized forces were given the task of outer cordon but could not successfully achieve it without augmentation from the light forces. Developing techniques while in combat is essential and can only be accomplished when units trust each other. As noted, "Too much emphasis cannot be placed on one

subject--continuous training during the lulls in the fighting and actually during the fighting. Continuous training of infantry troops in conjunction with tankers will produce techniques and bases of mutual confidence so necessary in the tank and infantry team” (Armored School 1953d, 135). Additionally, light forces require additional support by fire when preparing to assault buildings while also providing protection to armor vehicles. This was realized after a few operations and was captured in a final AAR. But to fix these shortcomings and maintain proficiency can only be addressed if these light, armor, and mechanized units train as task organized forces in a MOUT environment and take those lessons learned home to retrain as organic elements. Much like a heavy machine gun squad learns to support its platoon in operations. As stated earlier due to the different locations of these forces in the states the ability to train together only happens once a year at the JRTC and the ability to sustain that proficiency is lost once both units deploy back to home station.

Operation Uphold Democracy in Haiti was planned as a forced entry operation, similar to that of Panama. Heavy units were called open to execute in the same manner as was required in Panama and Somalia. Once again a task force from the 24th Infantry Division provided the armor elements required and the mechanized and light forces experienced the same difficulties as experienced in earlier operations with the mechanized forces executing the same missions.

At the JRTC, airborne, air assault, and light units routinely deploy with a heavy team from anyone of the heavy divisions located in the United States. These units may or may not go into simulated combat together, as there is no requirement to form a habitual

relationship at home station and these units are not attached, OPCON or TACON to the brigade for any extended period of time, other than to execute the rotation. The principle behind the training is to provide an opportunity for both the mechanized and light forces to work together under simulated combat conditions in a variety of missions and through the AAR process, develop TTPs and correct those training deficiencies identified in order to be successful in combat operations. The missions are generally executed in restricted terrain in the offense, defense and MOUT environment. Unfortunately, the lessons learned are quickly forgotten once a unit redeploys. In most cases, SOPs are not updated, personnel rotate out of positions or to different post and in the case of those being assigned to Germany or Korea, never to work on those TTPs identified while supporting the rotation. That is one reason why the training center continues to see the same mistakes in employment over and over again. The units do not forge a relationship after the rotation and there are no requirements to do so. Generally, there is no follow up or retraining as enumerated in the 10-step training model used by most Army units. As noted here, "Tank crews and infantrymen alike must be taught the procedures and capabilities and limitations of each others weapons. The infantry commander who makes a strong attempt to see that his personnel are thoroughly oriented in the use of armor and in turn employs his armor properly will be paid off many times over" (Armored School, 1953d, 88). If a tank company were an organic element of the light infantry brigade it would be located on the same installation, executing the same training schedule and retraining those deficiencies identified with the brigade combat team. This same argument can be made against the habitual relationship of the attached tank company from the division's organic battalion.

The company returns to home station, initially planning for whatever the battalion may have planned next on the training schedule, and then as an after thought, work with its supported infantry brigade during possibly another train-up cycle for the next rotation or field training exercise. The brigade commander can exercise greater control on his units and their integrated training with an organic element than he can with an attached or OPCON unit. The importance of training is highlighted in this comment from a commander during the Korean War, his point is still valid today:

The integration of tank and infantry training must be implemented at every opportunity during the training cycle. This training should commence when tank crews are competent to handle vehicles and weapons. Small unit field problems; at the platoon and company level are excellent for teaching tank-infantry teamwork. (Armored School 1953d, 76)

This can only be accomplished in an organic unit and not in an attached unit from a different division, corps, or post. A case in point, was an observation of the same brigade combat team on two different rotations and with different supporting heavy teams. Most of the chain of command and supporting staff had rotated. Both heavy teams came from different divisions at different posts and corps and neither heavy commander had done any training with the brigade prior to the rotation other than a leadership training program seminar six months prior to the rotation. The combat team on both occasions, realizing the deficiency in light heavy operations, established a train up period four days prior to the start of simulated combat operations. Usually the rotation is eleven days “in the box” preceded by eight days of live fire in which only a platoon from the heavy team may participate with a light infantry company. In reality, the rotation of the armor or mechanized company team does not assume an attached or OPCON relationship with the

brigade until four days prior to the assault into the area of operation. In the first rotation it was a generic familiarization at the intermediate staging base (ISB). During the most critical fight for the brigade, the attack on the MOUT village, the armor team breached the village and was combat ineffective within four hours. This was due primarily to not fully understanding the capabilities and limitations of each other. The light forces thought the heavy force could protect itself from the enemy in the restricted MOUT terrain while waiting on the brigade to infiltrate without any additional forces for the heavy team. The heavy team commander, due to his inexperience with light forces, expected the light forces to move faster once the breach was made and committed to the fight early without significant security and forces to secure the foothold. This resulted in the light infantry attack culminating quickly because it no longer had the armor support to provide significant direct fire support as platoons moved from building to building to clear the enemy. The light infantry could not use the armor vehicles to protect them as they moved to each building, a technique that was deemed successful during World War II when fighting from building to building. However, on a return rotation the brigade conducted lane training at the ISB with each of the platoons of the brigade and were also able to conduct several smaller attacks on the smaller MOUT sites with their newly assigned heavy team over the course of six days in order to develop and refine TTPs and prepare them for the larger MOUT attack. This proved to be successful in that the brigade only lost six of the fourteen armored vehicles and was able to turn control of the village over to the host nation.

One additional problem was in the realm of combat service support. An observation noted by an observer, identified that the heavy and light forces evacuated their own casualties. This also applied to supplies of class I, III, V, and water, with each unit left to fend for itself within its own organization. There was no identifiable cohesion experienced with these units as the 173rd ABN BDE experienced earlier. Although the second rotation was successful it was under false pretenses. The first, under the concept of the IRC, units will not get an opportunity to conduct a full dress rehearsal prior to executing combat operations unless they have a very cooperative enemy. It also does not address personnel turnover in both the light and heavy unit. At least an organic unit can maintain a center level of proficiency with those people still in the unit while retraining those deficiencies. Second, planning will be conducted over long distances since both units are coming from different installations. Thirdly, the unit cohesion does not exist. This is an intangible that must be present in order to overcome the challenges associated with long term combat as experienced during World Wars I and II, Korea and Vietnam: "Combat will be psychologically terrifying. Strong group loyalty and discipline will enable a combat unit stay and fight together effectively against heavy opposition. Group loyalty and discipline occur when soldiers have worked together for long periods and have faith in the proven ability of their leaders" (Phipps 1982, 1). This is exhibited every time we see armor and mechanized units fighting at the NTC within their element and the light infantry forces attacking objectives at the JRTC without armor support, an immense sense of loyalty to one another that can only be achieved by being part of the team, an organic element.

Comparison

During World War I the tank was introduced into combat for the first time. With this awesome machine came changes in the way the Army fights. New organizations developed, doctrine changed, and new meanings were given to the words attached, organic, and OPCON. In World War II there were two significantly different outcomes in how units addressed the meaning of organic and attached. For the 1st and 3rd Infantry Divisions attached meant organic, which can best be summed up in this quote when a 3rd Infantry Division plans officer was asked by a VI Corps liaison officer to list out various tank battalions within the Corps based on merit of success why he had left the 756th out of his list, “funny you didn’t mention the 756th (the battalion that had been attached to the 3d Division for some time). Oh! He replied hastily. That’s a part of the division. They don’t come any better than that” (O’Daniel 1946,44). This example of what is supposed to be an attachment turned into an understanding of ownership with a habitual relationships ultimately translating to commanders at the regimental level and those soldiers who relied on the tanks to fight as an organic team purely by accident only to be identified in board reviews and conferences after the war. Because of these successes, commanders deemed it necessary to have an organic tank unit at the regiment level. It was over the course of the war that units were able to achieve that level of proficiency. Commanders realized that only through time and training could they expect to reach the same level achieved in infantry armor operations at the end of the war. Based on their combat experience these commanders also made recommendations to the Army to build cohesive combined arms

team for combat. The Army obliged and made changes to the division organization and added the regimental tank company.

When comparing Korea against the examples of World War II one would think that those units deploying to Korea would not have to experienced the same difficulties as the 45th Infantry Division in Italy. The Army recognized the benefits of combined arms operations and team cohesion. It add a RTC to the infantry regiment's MTOE. However, when entering combat in Korea, the regiments did not deploy with their tanks. They had none. So the combined arms teams that were built on lessons learned from the previous two wars had no infantry and tank operations training. This training and proficiency was only achieved due to the length of combat, as seen with the 1st and 3rd Divisions who suffered a significant loss of men and machine in the first stages of the World War II. Ultimately, the hard lessons of World Wars I and II had to be relearned once again in combat. Numerous professional magazines documented the successes of several regimental tank companies. Most notably were Captain Drake and Lieutenant Colonel Picket's strong arguments for retaining the RTC. Their arguments were based on wartime experience in those organizations. Further more, by the end of the Korean War regiments had once again achieved the same level of proficiency that was enjoyed by the veterans of World War II.

When comparing Vietnam against the examples from the three previous wars, the first combat unit deployed is an airborne brigade with its organic tank company. This combined arms team proved to be successful in its first days of combat. This unit deployed with two years of prior training. Based on its early successes in combat, this

became one of the reasons why more armor units deployed to support infantry operations. However, these new deploying infantry and tank units are forced to relearn the infantry tank team lessons identified in the ETO, PTO, and Korea. Due to the lack of significant amounts of armor and training infantry units were hesitant to employ tanks to their full potential. Unfortunately, it took almost ten years of fighting to develop the level of proficiency achieved in World Wars I and II, and Korea. Towards the end of the war tanks were employed when available in all significant combat operations as infantry tank teams. Finally achieving the success of unit cohesion that was attributed to the successes in the previous wars. In over fifty years of combat, infantry brigade commanders still want the organic tank company at the regiment or brigade level to enhance their direct fire abilities and armor commanders concur with the limitations that occur when there is not a habitual relationship.

When comparing more recent operations in Panama, Somalia and Haiti and recent JRTC rotations. The same trends are apparent as those discovered in earlier and conflicts and are measured in terms of lives and objectives. The word attachment and OPCON do not work unless there is significant time for these units to train. What World Wars I and II, Korea, and Vietnam had in common with each other was time in combat that substituted for time to train and only through combat was the attachment or OPCON relationship able to work. When compared to more recent operations. Time was not available to make the attached and OPCON relationships work. JRTC rotations are also no substitutes for time or training especially if units are unable to retrain the problems identified during a simulated combat situation. These issues were identified by

commanders in World Wars I and II, Korea, Vietnam, and the most recent operations, yet continue to resurface. The organic relationship is the only substitute for time and training, because the brigade commander can control both time and training with his organic elements.

Summary

This chapter reviewed and compared the information selected in answering the primary and secondary questions to this thesis. The prevailing thoughts during this review of World Wars I and II, Korea, Vietnam and the more recent operations in infantry and tank teamwork. Teamwork can only be achieved through constant training, a habitual relationship and mutual trust that are only possible over a course of time. The answer that has been echoed over the course of this chapter is that teamwork is achieved in an organic environment. It is in this organization that the brigade commander can develop his team. Chapter five offers a final conclusion and recommendation as well as a recommendation for future areas of study.

CHAPTER FIVE

CONCLUSION

Introduction

This study answered the primary research question of whether or not the airborne, air assault, light infantry divisions and LIBs of their respective infantry divisions along with the separate infantry brigades, need an organic tank company added to their MTOE. The secondary, tertiary and subsequent questions centered on: whether an organic tank company improves the LIB's combat effectiveness; will a designated attached armor or mechanized infantry company team improve the LIB's combat effectiveness; will placing an armor or mechanized infantry company team under the LIB's operational control improve its combat effectiveness; and finally, how crucial is the habitual relationship of an organic tank company to a LIB's combat effectiveness?

World War I's overarching lesson on the use of armor was that the infantry and the tanks needed to figure out how to work together. The short-term fix called for infantry tanks to support the infantry. It was here that we begin to witness the early evolution of infantry and armor or tank and combined arms doctrine, highlighted in the Eisenhower memos.

With World War II, the United States found itself at war once again. This time, the military decided to pool all of its armor assets to deploy them to units with the greatest need and despite earlier proof that tanks should be organic to the fighting regiment at all times for combat. After a series of boards, reviews and AARs, the Army concurred with

its field commanders. The organization of the infantry division changed, making tank companies an organic element to the regiment and an organic tank battalion to the division. These changes addressed the shortfalls in combined arms operations and unit cohesiveness identified previously.

In Korea, units deployed to the war suffered the same problems identified in previous wars. Regiments and divisions made paper changes, but failed to initiate training for the infantry tank team. The same lessons were relearned during the first few months of the war and units begin to achieve success toward the end of the war. Infantry and tank teamwork was one of the successes of the war.

After the Korean War, the Army downsized and reorganized in favor of the division organic tank battalion, thereby eliminating the regimental tank company. However, the first combat unit to deploy to Vietnam, a separate airborne infantry brigade, deployed with an organic tank company. The successes experienced by this brigade impressed Army leadership and prompted the deployment of three organic divisional tank battalions. Still three battalions were inadequate for the eight divisions deployed and the units were exposed to the same pooling effect that was experienced in World War II. Additionally, armor and light forces did not understand each other's strengths and weaknesses, and lacked the TTPs to fight as a coordinated team. Cohesion therefore failed and coupled with the over tasking endured by armor units led to disdain among infantry counterparts.

Over the next 20 years, the Army used attached and OPCON as its watchwords with operational deployments to Panama, Somalia and Haiti. In each case, armored units deployed from different divisions and locations only to repeat the lessons of the four

previous wars in terms of the tank company and its supported light infantry brigade. The Army has not learned and continues to lose time because of its inability to change the organization of its units to meet the needs of the modern battlefield.

Conclusions

Current Army airborne, air assault, light infantry, and separate brigade organizations are inadequate to meet current and future operational requirements. Lessons learned from previous wars and subsequent contingency operations reveal that the trend was for field commanders to have an organic tank company assigned to them in all combat situations. They recognized the need for combined arms training and execution along with the benefits of a cohesive team. The ad hoc way of doing business with OPCON or attachment of the IRC from different divisions, corps and or posts, is ineffective and may ultimately lead to disaster if we have a more determined foe.

The results of this research indicate that the light infantry brigades need organic separate tank companies assigned to their MTOE in order to meet their operational requirements. A historical review proves that in order to achieve what field commanders have identified as success, they must have an organic team. This team will foster unit cohesion that will translate into better results on the battlefield. The current method of utilizing the IRC in the role of an attachment or in an OPCON relationship does not work and its lack of success in recent operations and at the JRTC, support that contention. Units require significant on the fly train-up while in theater with each other in developing TTPs,

mutual trust, and an understanding of each others strengths and weaknesses in teambuilding. Units that are organic to each other can achieve this teamwork beforehand.

The Army, in a never-ending cycle of reinventing itself, has recently developed the Stryker brigades, an attempt at giving the brigade and battalion commanders that much needed firepower while also developing the team. The brigade consists of three maneuver battalions each with three task-organized companies consisting of three platoons mounted on infantry carriers and mobile gun system platoon (very light mobile tank killing system), a cavalry squadron and additional assets. At a quick glance, the organization of this brigade is similar to that of what has been tried and preached on by commanders of past, the integrated combat team.

Recommendations

The Army should reallocate the armor assets found in the mechanized infantry divisions (as done in World War II), to ensure that the light units of the Army have the organic forces required to meet their operational requirements. The Army should take a battalion of tanks from each of the mechanized infantry divisions (in name only) that have the MTOE of an armor division, and align them as mechanized infantry divisions, thus ensuring that the light brigades of the Army have the required number of tanks for combat. The Army should also consider reallocating the support eliminates necessary to execute such an organization.

Recommendations for Future Study

This thesis focused on the relationship of a unit through observations made in combat. It did not discuss the type of enemy faced or the factors of mission, equipment, terrain, time, troops available, or civilians. Nor did it address the type of armor platform that would best fill the role of the tank in a separate brigade tank company or revisions in the doctrine we currently use. The enemy was unspecified because in most cases the commanders wanted tanks available at all times despite the type of enemy and the commanders did employ the tanks at all times even if they were on utilized as a form of transportation. It was their belief that having tanks organic to the units made the difference in the number of infantry casualties their units sustained. Further study in the type of enemy and type of platform used should be conducted in order to determine whether a change in doctrine is required. Finally, the organization of the tank company or whether or not the platforms being tested for the STRYKER Brigades can be used to fill the role required, while also reducing the logistical tale, could be beneficial to the changes occurring within the Stryker Brigades.

REFERENCE LIST

- Aitken, Mark. 2002. Interview by author, 30 December, Ft. Leavenworth, KS.
- Allard, Kenneth. 1995. *Somalia Operations: Lessons Learned*. Fort McNair, Washington, DC: National Defense University Press.
- Armored School. 1949a. Committee 2, Research Report: American Armor at Anzio, Italy, 16 February-27 May 44. Fort Knox, KY: Armored School, May.
- _____. 1949b. Committee 4, Research Report: Armor at Bastogne. Fort Knox, KY: Armored School, May.
- _____. 1949c. Committee 7, Research Report: Armor in the Hurtgen Forrest, 14 September-15 December 44. Fort Knox, KY: Armored School, May.
- _____. 1950a. Committee 11, Research Report: 735th Tank Battalion in the Reduction of Metz. Fort Knox, KY: Armored School, May.
- _____. 1950b. Committee 12, Research Report: Armor in an Infantry Division. Fort Knox, KY: Armored School, May.
- _____. 1950c. Committee 16, Research Report: Operation of the Separate Tank Battalion. Fort Knox, KY: Armored School, May.
- _____. 1950d. Committee 25, Research Report: Armor in the Invasion of North Africa. Fort Knox, KY: Armored School, May.
- _____. 1952a. Committee 10, Research Report: Should Tank Units Be Trained in Indirect Fire? Fort Knox, KY: Armored School, March.
- _____. 1952b. Committee 11, Research Report: Employment of Armor in Korea-The First Year. vols. 1 and 2. Fort Knox, KY: Armored School, May.
- _____. 1952c. Committee 28, Research Report: Separate Tank Battalion vs. the Tank Regiment. Fort Knox, KY: Armored School, May.
- _____. 1953a. Committee 1, Research Report: The Armor-Airborne Team in Action. Fort Knox, KY: Armored School, April.
- _____. 1953b. Committee 2b, Research Report: The Feasibility of a Standard Tank Company and Battalion. Fort Knox, KY: Armored School, April.

- _____. 1953c. Committee 17, Research Report: Critical Analysis of the History of Armor in World War II. Fort Knox, KY: Armored School, April.
- _____. 1953d. Committee 35, Research Report: Employment of Armor in Korea-The 2d Year. Fort Knox, KY: Armored School, April.
- Army Ground Forces. 1945. *Order of Battle of the United States Army, World War II, European Theater of Operations, Divisions*. Paris, France: Office of The Theater Historian, December.
- _____. 1945a. Review 132, Infantry – Tank Coordination. Washington, DC: Army Ground Forces.
- _____. 1945b. Review 157, Notes from Various Commanders in Normandy. Washington, DC: Army Ground Forces.
- _____. 1945c. Review 191, Notes from Various Commanders in Normandy. Washington, DC: Army Ground Forces.
- Baker, Caleb, Thomas Donnelly, and Margaret Roth. 1991. *Operation Just Cause*. New York, NY: Lexington Books.
- Bautz, Edward, MAJ, USA. 1946. The Tank-Infantry Team in an Armored Division. *Cavalry Journal* 55, no. 3 (May-June): 49-51.
- Bolger, Daniel, 1997. *The Battle for Hunger Hill*. Novato, CA: Presidio Press, February.
- Boyko, Robert G., Major, USA. 1991. Just Cause MOUT lessons Learned. *Infantry*. May-June, 28-32.
- Boudinot, Burton S., Lieutenant Colonel, USA. 1989. A Missing Link in Support of Light and Heavy Forces. *Armor*, March-April, 40-41.
- Campbell, William R., Major, USA. 1947. Tanks with Infantry. *Cavalry Journal* 55, no. 5 (September-October): 49-51.
- Center for Army Lessons Learned. 2003. *Heavy Team Handbook*. Fort Leavenworth, KS: Center for Army Lessons Learned. December.
- _____. 1990a. *Operation Just Cause Lessons Learned*. Vol. 1, *Soldiers and Leadership*. Fort Leavenworth, KS: Center for Army Lessons Learned, October.
- _____. 1990b. *Operation Just Cause Lessons Learned*. Vol. 2, *Operations*. Fort Leavenworth, KS: Center for Army Lessons Learned, October.

- _____. 1990c. *Operation Just Cause Lessons Learned*. Vol. 3, *Intelligence, Logistics, and Equipment*. Fort Leavenworth, KS: Center for Army Lessons Learned, October.
- _____. 1992. Newsletter 93-01, Somalia: Operations Other Than War. Fort Leavenworth, KS: Center for Army Lessons Learned, October.
- _____. 1998. Newsletter 98-10, Fighting Light/Heavy in Restricted Terrain. Fort Leavenworth, KS: Center for Army Lessons Learned, October.
- Charles, C. M. 1988. *Introduction to Educational Research*. White Plains, NY: Longman.
- Cutler, M. M., Captain, USA. 1945. Cooperation with the Infantry. *Infantry*, June, 9.
- Daniel, James B., 1996. Mechanized Forces in MOUT, M113 Lessons Learned From Operation Just Cause. *Infantry*, May-June, 8-11.
- Defense Management Study Group on Military Cohesion. 1984. *Cohesion in the US Military*. Washington, DC: National Defense University.
- Drake, Robert E., Captain, USA. 1951. The Infantry Regiment's Tank Company. *Armor*, September-October, 14-17.
- Duncan, W. D., Lieutenant Colonel. USA. 1948. Tanks and Infantry in Night Attacks. *Cavalry Journal* 57, no. 1 (January-February): 56-61.
- _____. 1949. Tanks with the Infantry Division, *Military Review* 29, no. 3 (June): 45-51.
- Dunn Jr., James A., Major, USA. 1987. Heavy Force Light Force: A Heavy Force of the 4th ID (M) Maneuvers with a Light Task Force at the NTC. *Armor*, September-October, 10-15.
- Eisenhower, Dwight D., Major, USA. 1932. Tanks with Infantry. Infantry Training Memorandum. Infantry School, Fort Benning, GA.
- Fagan, H. James, Captain, USA. 1945. Fighting Tanks Isn't Easy. *Infantry*, September-October, 29-30.
- Freeman, Carl H., Lieutenant Colonel, USA. 1991. The Army Needs a Strategic Armored Gun System--Now. Thesis, U.S. Army War College, Carlisle Barracks, PA.
- French, Daniel H., Lieutenant Colonel. USA; Lieutenant Colonel Gregory A. Stone, USA; and Lieutenant Colonel Davis D. Tindoll, USA. 1997. *Tank--Light Infantry Company Operation (Draft Field Manual)*. Carlisle Barracks, PA: U.S. Army War College.

- French, Mark R., Major, USA. 1992. The Armor Force in Contingency Operations: Do We have the Right Tactical Doctrine? Thesis, US Army Command and General Staff College, Fort Leavenworth, KS.
- Galvin, John R., Lieutenant General, USA. 1982. The Heavy Light Concept. *Armed Forces Journal International* 119, no. 12 (July): 66-80.
- _____. 1984. Heavy-Light Forces and the NATO Mission. *Infantry*, July-August, 10-14.
- Glenn, Russell W., Major, USA. 1990. Give Me a Heavy-Light. *Armor*, September-October, 35-37.
- Greenfield, Kent R., Lieutenant Colonel, USA. 1946. *Origins of the Army Ground Forces: General Headquarters United States Army, 1940-1942*. Washington, DC: US Army Ground Forces.
- Hagen, Marshall A., Major, USA. 1996. Employment of Light Infantry in Contingency Operations: What do we do without light armor. Monograph, US Army School for Advanced Military Studies, Fort Leavenworth, KS.
- Hallmark, Bryan W., and James C. Crowley. 1997. *Company Performance at the National Training Center, Battle Planning and Execution*. Washington, DC: RAND.
- Hamilton, Michael A., Major, USA. Heavy-Light Operations. *Infantry*, September-October, 22-26.
- Hammond, Kevin J., Captain, USA, and Captain Frank Sherman, USA. 1990. Sheridans in Panama. *Armor*, 8-15.
- Harper, Robert S., First Lieutenant, USA. 1953. The Proper use of Armor. *Combat Forces Journal* 4, no. 9 (September): 10-14.
- Henderson, William D. 1982. *Cohesion, The Human Element in Combat*. Washington, DC: National Defense University.
- Hoffman, George F., and Donn A. Starry, eds. 1999. *Camp Colt to Desert Storm: The History of the US Armored Force*. Lexington, KY: The University Press of Kentucky.
- Hurley, Emerson J., Major, USA. 1947. Tank-Infantry Teamwork at Its Peak in the Armored Division. *Cavalry Journal* 56, no. 3 (May-June): 27-28.
- Hutcheson, John M., Colonel, USA. 1991. Of Tank and Infantry: Lessons of Heavy-Light Integration, Forgotten and Relearned. Thesis, U.S. Army War College, Carlisle Barracks, PA.

- Icks, Robert J., Colonel, USA. 1972. *Famous Tank Battles*. Garden City, NY: Doubleday and Company.
- _____. 1951. Integrated Armor. *Armor*, January-February, 37-39.
- Johnson, Hubert C. 1995. *Breakthrough, Tactics, Technology, and the Search for Victory on the Western Front in World War I*. Novato, CA: Presidio Press, February.
- Keller, Robert S., Second Lieutenant, USA. 1951. The Tank Platoon Leader in Korea. *Armor*, July-August, 12-13.
- Koch, Harlan G., Captain, USA. 1953. Tanks and Infantry at Night. *Combat Forces Journal* 9, no. 4 (September): 35-37.
- Kolenda, Christopher, Major, USA, ed. 2001. *Leadership: The Warrior Art*. Carlisle, PA: Army War College Foundation Press.
- _____. 2002. Interview by author, 30 December, Ft. Leavenworth, KS.
- Komer, R. W. First Lieutenant, USA. 1945. Assault Along the Ridges. *Infantry*, July-August, 16-20.
- Naylor, Sean D. 1996. Good Bye Sheridan: What's Next as the 82d Loses Only Tank Battalion? *Army Times*, 9 September, 14-16.
- Lynch, James H., Lieutenant Colonel, USA. 1950. Tie-in in Korea. *Armored Cavalry Journal* 59, no. 6 (November-December): 17-18.
- Macksey, Kenneth. 1972. *Tank Warfare*. New York, NY: Stein and Day.
- Mahler, Michael D. 1986. *Ringed in Steel*. Novato, CA: Presidio Press.
- Malone, Jean T., Major, USMC. 1996. Armor in Military Operations Other Than War. Thesis, US Army Command and General Staff College. Fort Leavenworth, KS.
- Mantua, Frank. 1968. Personal notes from the Vietnam War. Given to author, Ft. Leavenworth, KS, December 2002.
- _____. 2002. Interview by author, 30 December, Ft. Leavenworth, KS.
- Marusek, Peter, Captain, USA. 1946. Tanks and Infantry in Northern Luzon. *Cavalry Journal* 55, no. 3 (May-June): 17-19.
- Mazarr, Michael J. 1989. The Light-Heavy Debate Rears Its Head Again. *Armed Forces Journal International* 126, no. 10 (October): 99-101.

- Mesko, Jim. 1982. *Armor in Vietnam*. Carrollton, TX: Squadron/Signal Publications.
- _____. 1984. *Armor in Korea*. Carrollton, TX: Squadron/Signal Publications.
- Moore, Roy E., Lieutenant Colonel, USA, and Lieutenant Colonel Lyle W. Bernard, USA. 1945. Why Not Tanks. *Infantry*, February-March, 17-18.
- Mosher, Alan M., Major, USA. 1993. Light Armor MOUT Doctrine: Imperative Change of Business as Usual? Thesis, US Army Command and General Staff College, Fort Leavenworth, KS.
- Niedringhaus, David A., Captain, USA. 1987. U.S. Army Armor in Limited War: Armor Employment Techniques in Korea and Vietnam. Thesis, Ohio State University, Columbus, OH.
- O'Daniel, John W., Major General, USA. 1946. The American Infantry-Armor Team. *Armored Cavalry Journal* 55, no. 3 (May-June): 42-46.
- Offutt, Ronald, D., Major, USA. 1989. One Tank, 31 Boxes of .50 CAL, and 11 Men: An Analysis of the Armor-Infantry Team in Korea, June 1950-July 1952. Thesis, US Army Command and General Staff College, Fort Leavenworth, KS.
- Oldinsky, Frederick, E. Major, USA. 1976. Armor in Vietnam. Thesis, Army Command and General Staff College, Fort Leavenworth, KS.
- Phipps, Jeremy J., Lieutenant Colonel, USA. 1982. *Unit Cohesion: A Prerequisite for Combat Effectiveness*. Washington, DC: National Defense University.
- Pickett Jr., Theodore R., First Lieutenant, USA. 1951. The Tank-Infantry Team at Work. *Armor*, May-June, 9-11.
- Pickett, George B., LTC, USA. 1950a. The Regimental Tank Company. *Infantry*, June, 21-26.
- _____. 1950b. Tanks in Korea. *Armor*, November-December, 6-9.
- _____. 1951a. Captain Doughboy: Infantry-Tank Team Commander. *Infantry*, June, 112-119.
- _____. 1951b. Tanks in The Defense. *Armor*, July-August, 14-17.
- Rosen, Milton L., Lieutenant Colonel, USA. 1945. Forest Fighting. *Infantry*, April, 11-14.
- Ross, Brian. 1996. The Use of Armor in The Vietnam War, Article on-line. Available from www.lbjlib.utexas.edu/shwv/articles/arm-faq.htm. Internet.

- Rouleau, Richard R., Captain, USA. 2001. Mountain Cavalry RECON in Built-Up Areas. *Armor*, July-August, 16-18.
- _____. 2000-2002. Notes from the author's Observer-Controller Green Book, JRTC Rotations, Ft. Polk, LA. Notes in author's possession.
- Rouleau, Richard R., Captain, USA; Sergeant First Class Wesley Wyatt, USA; and Sergeant First Class Martino Barcinas, USA. 2002. Armor and Mechanized Infantry in Built-Up Areas. *Armor*, September-October, 47-48.
- Rouleau, Richard R., Captain, USA; and Sergeant First Class Carl A. Pope, USA. 2002. A Technique for Preparing the M1 Series Tank for MOUT Operations. *Armor*, September-October. 49.
- Rowny, Edward L., Colonel, USA. 1953. Tanks and Infantry. *Combat Forces Journal* 4, no. 9 (September): 1-14.
- Scull, Kenneth C., Colonel, USA. 1993. Heavy and Light Force Integration at the National Training Center. *Military Review* 72, no. 5 (May): 41-51.
- Shankel, Mark E., Captain, USA. 1996. Bradleys in the City. *Infantry*, May-June. 6-8.
- Shufelt, James W., Major, USA. 1993. Mobile Firepower for Contingency Operations: Emerging Concepts for Army Light Armor Forces. Thesis, US Army Command and General Staff College, Fort Leavenworth, KS.
- Smith, Ray. 2002. Interview by author, 30 December, Ft. Leavenworth, KS.
- Stanton, Shelby L. 1984. *Order of Battle, U.S. Army, World War II*. Novato, CA: Presidio Press.
- _____. 1986. *Vietnam, Order of Battle*. Washington, DC: U.S. News Books.
- Starry, Donn A., General, USA. 1980. *Armored Combat in Vietnam*. New York, NY: Arno Press.
- Strand, Wilbur C., Lieutenant Colonel, USA. 1945. The Infantry-Tank Team in Jungle Operations. *Cavalry Journal* 54, no. 2 (March-April): 2-6.
- Swift, Eben F., Lieutenant Colonel, USA. 1945. Tanks Over the Mountains. *Infantry*, September-October, 32-34.
- Tompkins, John H., Second Lieutenant, USA, ed. 1945. Tanks and Doughboys. *Infantry*, June-July, 8-10.

- Thompson, Burdett K., Major, USA. 1996. Where's the Light Armor? Enhancing the Firepower of Early Entry Forces. Thesis, US Army Command and General Staff College, Fort Leavenworth, KS.
- Trahan, E. A., Lieutenant Colonel, USA. 1948. Armor in the Battle of the Bulge. *Cavalry Journal* 57, no. 1 (January-February): 2-12.
- U.S. Army. 1941. FM 7-35, *Tank Company, Infantry Regiment*. Washington, DC: HQ Department of the Army, 20 June.
- _____. 1944. AAR, 191st Tank Battalion. European Theater of Operation. US Army Combined Arms Research Library, Ft. Leavenworth, KS.
- _____. 1986. FKSM 17-3-2, *Armor in Battle*, Fort Knox, KY, March.
- _____. 1988a. FM 71-1, *Tank and Mechanized Infantry Company*. Washington, DC: Headquarters, Department of the Army.
- _____. 1988b. FM 71-2, *The Tank and Mechanized Infantry Battalion Task Force*. Washington, DC: Headquarters, Department of the Army.
- _____. 1988c. FM 71-3, *Armored and Mechanized Infantry Brigade*. Washington, DC: Headquarters, Department of the Army.
- _____. 1990. FM 7-10, *The Infantry Rifle Company*. Washington, DC: Department of the Army.
- _____. 1991a. FM 17-95, *Cavalry Operations*. Washington, DC: HQ Department of the Army.
- _____. 1991b. FM 17-18, *Light Armor Operations*. Washington, DC: Department of the Army.
- _____. 1992a. FM 7-20, *The Infantry Battalion*. Washington, DC: Department of the Army.
- _____. 1992b. FM 7-8, *Infantry Rifle Platoon and Squad*. Washington, DC: Department of the Army.
- _____. 1992c. FM 7-98, *Operations in a Low Intensity Conflict*. Washington, DC: Department of the Army.
- _____. 1995. FM 7-30, *The Infantry Brigade*. Washington, DC: Department of the Army.
- _____. 2001a. FM 3-0, *Operations*. Washington, DC: Department of the Army.

- _____. 2001b. FM 3-20.15, *Tank Platoon*. Washington, DC: Department of the Army.
- _____. 2001c. FM 3-90, *Tactics*. Washington, DC: Department of the Army.
- _____. 2002. FM 3-06.11, *Combined Arms Operations in Urban Terrain*. Washington, DC: Department of the Army.
- U.S. Army and Air Force. 1990. FM 100-20, *Military Operations in Low Intensity Conflict*. Washington, DC: Headquarters Departments of the Army and Air Force.
- U. S. Army. Command and General Staff College. Combat Studies Institute. 1999. Report 14, *Sixty Years of Reorganizing for Combat: A Historical Trend Analysis*. Fort Leavenworth, KS: US Army Command and General Staff College, December.
- U.S. Army. HQ, I US Corps. 1997. TTPs for Light Infantry Company Employment of Tank Platoons in Restrictive Terrain. HQ, I US Corps, Fort Lewis, WA, 28 May.
- U.S. Army and U.S. Marine Corps. 1993. FM 100-19, *Domestic Support Operations*. Washington, DC: Headquarters Departments of the Army and U.S. Marine Corps.
- U.S. Army Vietnam. 1967. *Mechanized and Armor Combat Operations in Vietnam*. Vietnam, 28 March.
- United States Forces. European Theater. 1946a. General Board Study #51, *The Armored Group*, European Theater, 21 February.
- _____. 1946a. General Board Study #52, *Armored Special Equipment*, European Theater, 21 February.
- _____. 1946b. General Board Study #53, *Tank Gunnery*, European Theater, 21 February.
- _____. 1947a. General Board Study #15, *Organization, Equipment and Tactical Employment of the Infantry Division*, European Theater, 20 February.
- _____. 1947b. General Board Study #17, *Types of Divisions-Post War Army*, European Theater, 20 February.
- _____. 1947c. General Board Study #48, *Organization, Equipment and Tactical Employment of the Armored Division*, European Theater, 20 February.
- _____. 1947d. General Board Study #49, *Tactics, Employment, Technique, Organization, and Equipment of Mechanized Cavalry Units*, European Theater, 20 February.

- _____. 1947e. General Board Study #50, Organization, Equipment and Tactical Employment of the Separate Tank Battalion, European Theater, 20 February.
- Ward, Orlando, Major General, USA. 1945. The Tank-Infantry Section *Infantry*, August-September, 8-9.
- Washburn, John W., Major, USA. 2000. Integration of Armored Forces in the U.S. Army Infantry Division. Monograph, US Army School for Advanced Military Studies, Fort Leavenworth, KS.
- Wear, John. 2002. Interview by author, 30 December, Ft. Leavenworth, KS.
- Wilson, John B. 1998. *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades*. Army Lineage Series. Washington, DC: CMHI.
- Wimmer, Kevin S., Major, USA. 1991. Armored Warfare in the Jungle Environment. Thesis, US Army Command and General Staff College, Fort Leavenworth, KS.
- Wunderle, William D., Major, USA. 1998. Forced in Left Out: The Airborne Division in Future Forcible Entry Operations. Monograph, US Army School for Advanced Military Studies, Fort Leavenworth, KS.

INITIAL DISTRIBUTION LIST

Combined Arms Research Library
U.S. Army Command and General Staff College
250 Gibbon Ave.
Fort Leavenworth, KS 66027-2314

Defense Technical Information Center/OCA
825 John J. Kingman Rd., Suite 944
Fort Belvoir, VA 22060-6218

Dr. Lon Seglie
Center for Army Lessons Learned
Assistant Chief of Staff for Training, TRADOC
Fort Leavenworth, KS 66027

LTC R. Shawn Faulkner
CTAC
USACGSC
1 Reynolds AVE.
Fort Leavenworth, KS 66027

Mr. Thomas Odom
Center for Army Lessons Learned
Operations Group
Joint Readiness Training Center
Fort Polk, LA 71459

CERTIFICATION FOR MMAS DISTRIBUTION STATEMENT

1. Certification Date: 6 June 2003
2. Thesis Author: MAJ Richard R. Rouleau
3. Thesis Title: Have Gun, Will Travel: A Tank Company in the Light Infantry Brigade
4. Thesis Committee Members _____

Signatures: _____

5. Distribution Statement: See distribution statements A-X on reverse, then circle appropriate distribution statement letter code below:



A B C D E F X

SEE EXPLANATION OF CODES ON REVERSE

If your thesis does not fit into any of the above categories or is classified, you must coordinate with the classified section at CARL.

6. Justification: Justification is required for any distribution other than described in Distribution Statement A. All or part of a thesis may justify distribution limitation. See limitation justification statements 1-10 on reverse, then list, below, the statement(s) that applies (apply) to your thesis and corresponding chapters/sections and pages. Follow sample format shown below:

EXAMPLE

<u>Limitation Justification Statement</u>	/	<u>Chapter/Section</u>	/	<u>Page(s)</u>
Direct Military Support (10)	/	Chapter 3	/	12
Critical Technology (3)	/	Section 4	/	31
Administrative Operational Use (7)	/	Chapter 2	/	13-32

Fill in limitation justification for your thesis below:

<u>Limitation Justification Statement</u>	/	<u>Chapter/Section</u>	/	<u>Page(s)</u>
_____	/	_____	/	_____
_____	/	_____	/	_____
_____	/	_____	/	_____
_____	/	_____	/	_____
_____	/	_____	/	_____

7. MMAS Thesis Author's Signature: _____

STATEMENT A: Approved for public release; distribution is unlimited. (Documents with this statement may be made available or sold to the general public and foreign nationals).

STATEMENT B: Distribution authorized to US Government agencies only (insert reason and date ON REVERSE OF THIS FORM). Currently used reasons for imposing this statement include the following:

1. Foreign Government Information. Protection of foreign information.
2. Proprietary Information. Protection of proprietary information not owned by the US Government.
3. Critical Technology. Protection and control of critical technology including technical data with potential military application.
4. Test and Evaluation. Protection of test and evaluation of commercial production or military hardware.
5. Contractor Performance Evaluation. Protection of information involving contractor performance evaluation.
6. Premature Dissemination. Protection of information involving systems or hardware from premature dissemination.
7. Administrative/Operational Use. Protection of information restricted to official use or for administrative or operational purposes.
8. Software Documentation. Protection of software documentation - release only in accordance with the provisions of DoD Instruction 7930.2.
9. Specific Authority. Protection of information required by a specific authority.
10. Direct Military Support. To protect export-controlled technical data of such military significance that release for purposes other than direct support of DoD-approved activities may jeopardize a US military advantage.

STATEMENT C: Distribution authorized to US Government agencies and their contractors: (REASON AND DATE). Currently most used reasons are 1, 3, 7, 8, and 9 above.

STATEMENT D: Distribution authorized to DoD and US DoD contractors only; (REASON AND DATE). Currently most reasons are 1, 3, 7, 8, and 9 above.

STATEMENT E: Distribution authorized to DoD only; (REASON AND DATE). Currently most used reasons are 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

STATEMENT F: Further dissemination only as directed by (controlling DoD office and date), or higher DoD authority. Used when the DoD originator determines that information is subject to special dissemination limitation specified by paragraph 4-505, DoD 5200.1-R.

STATEMENT X: Distribution authorized to US Government agencies and private individuals of enterprises eligible to obtain export-controlled technical data in accordance with DoD Directive 5230.25; (date). Controlling DoD office is (insert).